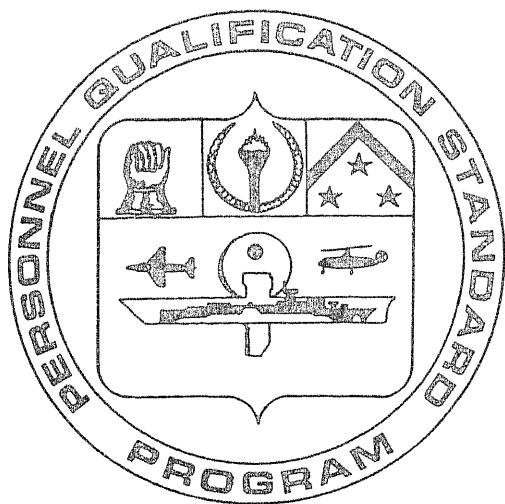


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NAVEDTRA 43204A



# PERSONNEL QUALIFICATION STANDARD

FOR

## SHIPBOARD AEROGRAPHER

CHIEF OF NAVAL EDUCATION AND TRAINING

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## AVIATION PQS USER'S GUIDE

This guide will explain the Personnel Qualification Standards (PQS) program, what it is, and how to use it.

### I. WHAT IS PQS?

PQS is a part of your Command's overall training program. It provides the minimum requirements to qualify on a Watchstation/Support Action. It is a method for qualifying officer and enlisted personnel in certain assigned duties. This PQS will assist you in becoming a more productive member of the "combat-ready qualified Navy team."

### II. WHAT MAKES UP THE PQS PROGRAM?

The PQS program consists of the Standard booklet and the Progress Chart.

A. The Standard booklet contains questions you must be able to answer and performance items you must be able to do in order to qualify for a particular Watchstation/Support Action. Standards are written by naval personnel after asking themselves, "What do I need to know to do the job properly?"

The Standard booklet is made up of the following parts:

1. TABLE OF CONTENTS
2. USER'S GUIDE
3. DEFINITIONS OF WORDS USED IN PQS
4. CONTRIBUTING FLEET PERSONNEL
5. ENLISTED AVIATION WARFARE SPECIALIST (EAWS) CROSS-REFERENCE
6. FUNDAMENTALS AND SYSTEMS SUMMARY
7. FUNDAMENTALS (100 SECTION)
8. SYSTEMS (200 SECTION)
9. QUALIFICATION SECTION
10. WATCHSTATIONS/SUPPORT ACTIONS (300 SECTION)
11. FEEDBACK FORM (CHANGE REQUEST)

B. The Progress Chart is used to display all the Standards in progress or that have been completed by your division or work center. Your division officer uses the progress chart to determine who is qualified to stand the watches or perform the tasks required by your division. You should check the progress chart periodically to make sure all of the Standards you have completed have been recorded.

### III. PQS FORMAT

A. The numbers in PQS follow a definite pattern. The following breakdown of the numbering system is a handy key to PQS format:

#### 1st thru 3rd Digit

- 100 section = Fundamentals
- 200 section = Systems
- 300 section = Watchstations/Support Actions



B. Each Fundamental, System and Watchstation/Support Action is assigned a three-digit number.

Example: 205

205 - Indicates section 2 (System section) and that it is the 5th System

In the systems part of your Standard booklet, you may find a format such as the following example. For item .21 you must answer questions A, B and C. For item .21 a. only questions A and B are required. If there is no grid with X's, all questions must be answered.

205.2 SYSTEM COMPONENTS AND COMPONENT PARTS

Discuss the designated items for the following components and component parts:

- A. What is its function?
- B. Where is it located?
- C. What is the source of power?

- .21 Wind-measuring set (B-3)  
a. Wind direction indicator

| A | B | C |
|---|---|---|
| X | X | X |
| X | X |   |

C. Qualification Group Numbering System

The Watchstation/Support Action section (300) is divided into qualification groups. Your book may be used for more than one final qualification such as AN/SMQ-6(V) Meteorological Data Receiver-Recorder Set Operator. Each group is indicated on a Final Qualification Sign-Off Page as follows:

Example: NAVEDTRA 43204A-Q1

- 43204 - Indicates NAVEDTRA number assigned to the PQS package
- A - Indicates first revision
- Q1 - Indicates the first qualification group

1. FUNDAMENTALS (100 Section) This section identifies basic knowledge needed to do the job properly. Normally you would have acquired this knowledge during the school phase of your training. If you have not been to school, the requirements are outlined and the references listed will aid you in a self-study program.

2. SYSTEMS (200 Section) In systems, the subject under discussion is broken down into functional sections that may be compared to the electrical system in your car. The components of the electrical system are scattered throughout your car, but taken all together they form the "electrical system." The same is true of the equipment you are studying. The components may not all be located in one place, but they still form a system.

3. WATCHSTATION/SUPPORT ACTION (300 Section) This section contains the procedures you need to know to properly perform your job. Watchstations/Support Actions are divided into final qualification "groups" (Qual 1, Qual 2, etc.) with each group containing the following:

a. Final Qualification Sign-Off Page

Final record that is filed in your training jacket and recorded in your Service Record upon final qualification

b. Qualification Summary Page

Record of completion of other PQS qualifications, and Watchstations/Support Actions within a qualification group

c. Watchstations/Support Actions (Task Sign-Off Pages)

Record of completion of performed tasks and instruction watches for each Watchstation/Support Action

#### IV. HOW TO QUALIFY

Your division officer or work center supervisor will issue you a PQS booklet. Your supervisor will assign Watchstations/Support Actions and set time limits (goals) for completing your qualification. Progress toward qualification will be monitored on the division/work center Progress Chart.

A. Open your Standard booklet to your assigned Watchstation/Support Action. At the beginning of the Watchstation/Support Action you will find a list of items that must be completed before starting your tasks. Standards may include Watchstations/Support Actions other than the one on which you are working. You should concentrate on the prerequisites for the Watchstation/Support Action to which you have been assigned. Do not delay your qualification by spending time on others.

B. Complete the Safety Precautions Fundamentals first, then the rest of the required Fundamentals and Systems. Your supervisor may require you to complete these in a certain order, if not, the choice is up to you. If you do not know the answer to a question in the Standard booklet, look up the answer in one of the reference books listed. If you cannot find the answer in the reference books, ask your supervisor for help.

C. As you complete a Fundamental or System section, have the Qualification Petty Officer sign your Fundamentals and Systems Summary page. When you have completed all prerequisites, you are ready to start the performance items listed for that Watchstation/Support Action. Report your completion of all requirements of that Watchstation/Support Action to your supervisor.

## V. THE SUPERVISOR

As a senior petty officer, you will be required to assign junior personnel to complete specific Watchstations/Support Actions in PQS. When you do this, always look through the Standard booklet to determine other items that should be completed before work is started on the required Watchstations/Support Actions or related Fundamentals and Systems. If you are assigning more than one Watchstation/Support Action or section to be completed, it is your decision to specify which one should be completed first. The supervisor is an extremely important part of the PQS program if it is to be successful. If you administer PQS with insight, you will find that PQS is a helpful tool that can fit into your overall training plan. You will be responsible for the accuracy, updating, and tailoring of PQS to fit your command's needs, as well as for the initiation of appropriate feedback to the PQS Development Group (feedback forms are located in the back of each Standard booklet). You should provide motivation to your personnel by assigning goals, showing interest, and following the trainees' progress. The supervisor is responsible for training and should be the one to update and maintain the progress chart. It is important that the supervisor be aware of who is and who is not progressing, as well as where counseling or individual instruction may be needed. A sample PQS progress chart can be found in the PQS Manager's Guide (NAVEDTRA 43100-1B). As a supervisor you must be totally familiar with the duties, responsibilities, and assignments of your Qualification Petty Officers. Your PQS program cannot survive without good planning and quality control.

## VI. THE QUALIFICATION PETTY OFFICER

A. Selection as a Qualification Petty Officer means that you are one of the command's subject matter experts on those Fundamentals, Systems, and Watchstations/Support Actions assigned to you. PQS cannot be successful without you. Your job is to be totally knowledgeable in your assigned areas, to make yourself available to check off your trainees' achievements, and to ensure that a high-quality PQS program is maintained in your division.

B. Each Qualification Petty Officer should have a set of standard answers for the Watchstations/Support Actions so that all trainees receive the same answer. If multiple signatures are required for a line item, it is preferable that one working day or one watch elapse between signatures. If the trainee does not know the correct answer, it is your responsibility to help find the answer in the reference material. This will speed up the process of qualification and will familiarize your trainees with the use of publications. Obviously, this requires that you know where all the answers can be found.

C. As the Qualification Petty Officer you will be the most likely individual to discover discrepancies in the Standard booklet. Any discrepancies noted should be brought to the attention of your supervisor so that appropriate tailoring and corrections can be made. It must be understood that the PQS booklet should be tailored to fit your command's needs. Such tailoring is to be accomplished only with approval of your Commanding Officer or a designated official.

## DEFINITIONS OF WORDS USED IN PQS

AIRCREW EVOLUTION - A grouping of aircrew tasks that measure performance in the course of a flight

COMPONENTS - Major units that make up a system when properly connected

COMPONENT PART - A major part of a component

CONTROL SIGNAL - A signal used to control electronic or mechanical devices

EMERGENCY - An event or series of events in progress that will cause damage to equipment or personnel unless immediate corrective steps are taken

FUNDAMENTALS - Basic facts, theories, laws or principles (100 Section in PQS)

INTERLOCK - A protective device to prevent the unsafe operation of equipment or to sequence the action of systems, components or component parts

MAINTENANCE ACTION - A maintenance technician qualification that measures ability to perform a designated task

MAINTENANCE OPERATION - A qualification that measures the ability to perform tasks (using established procedures) to determine the need for maintenance

NORMAL OPERATING VALUE - The point at which satisfactory performance may be expected

PARAMETER - A variable (temperature, pressure, flow rate, voltage, current, frequency etc.) that must be indicated, monitored, checked or sensed during operation or testing

PROTECTIVE FEATURE - A device designed to prevent damage or injury

SENSING POINT - The point in a system at which a signal may be detected

SETPOINT - The value of a parameter at which: (a) an alarm is set off, (b) operator action is required, (c) valves open or shut, (d) proper operation stops and damage may occur, or (e) the optimum value for normal operation

SUPPORT ACTION - A qualification that measures the ability to perform specific or repetitive tasks that do not involve the correction of a malfunction or repair of equipment

SYSTEMS - Groups of components that operate together to perform specific functions (200 Section in PQS)

SYSTEM INTERFACE - (a) How outside influences affect the operation of this system, or (b) How the operation of this system affects the operation of other systems or equipment

TOLERANCES - Maximum and minimum allowable values of a parameter

WATCHSTATION/WORKSTATION - An operator qualification that includes duties, assignments or responsibilities that an individual may be called upon to perform (not necessarily limited to a specific time period)

### CONTRIBUTING FLEET PERSONNEL

The following personnel, under the supervision of the PQS Development Group, made a significant contribution to the development of this PQS for Shipboard Aerographer:

|      |                  |
|------|------------------|
| CW03 | M. HARDER        |
| AGCS | T. M. MIOVAS     |
| AGC  | B. L. EISNER     |
| AGC  | J. G. EVANS      |
| AGC  | A. H. V. NOWICKI |
| AGC  | M. L. PENROD     |
| AG1  | J. P. WEYLAND    |

|                                   |
|-----------------------------------|
| NAVEASTOCEANCEN, Norfolk, VA      |
| NAVOCEANCOMFAC, Bay St. Louis, MS |
| USS INDEPENDENCE (CV-62)          |
| NAVOCEANCOMDET, Miramar, CA       |
| NAVOCEANCOMFAC, San Diego, CA     |
| NAVOCEANCOMFAC, Bay St. Louis, MS |
| NAVPOLOROCEANCEN, Suitland, MN    |

ENLISTED AVIATION WARFARE SPECIALIST (EAWS)  
PQS CROSS-REFERENCE

Upon completion of this PQS, the requirements for the following line items from the EAWS PQS (NAVEDTRA 43423, March 1980) will be satisfied:

216 and 217

# FUNDAMENTALS AND SYSTEMS SUMMARY

## FUNDAMENTALS

|     |  | SIGNATURE | DATE | PTS |
|-----|--|-----------|------|-----|
| 101 | Bathythermograph (BT) Observation                        |           |      | 1   |
| 102 | Communications   |           |      | 1   |
| 103 | Chart Plotting and Codes                                 |           |      | 1   |
| 104 | Meteorology/Oceanography                                 |           |      | 1   |
| 105 | Surface Weather Observation                              |           |      | 1   |
| 106 | Radiosonde Observation                                   |           |      | 1   |
| 107 | Satellite Meteorology                                    |           |      | 1   |
| 108 | AN/SMQ-10 Satellite Readout Equipment                    |           |      | 1   |
| 109 | Oceanographic/Acoustic Prediction and Support            |           |      | 1   |
| 110 | Integrated Refractive Effects Prediction Support (IREPS) |           |      | 1   |
| 111 | Logistical Support                                       |           |      | 1   |
| 112 | Security   |           |      | 1   |
| 113 | Safety Precautions                                       |           |      | 1   |

## SYSTEMS

|     |   |  |  |   |
|-----|---|--|--|---|
| 201 | Bathythermograph (BT)                               |  |  | 1 |
| 202 | TT-321/UX Facsimile Transceiver Front Panel Control |  |  | 1 |
| 203 | Meteorological Chart                                |  |  | 1 |
| 204 | Temperature-Measuring                               |  |  | 1 |
| 205 | Wind-Measuring                                      |  |  | 1 |
| 206 | Cloud Height-Measuring                              |  |  | 1 |
| 207 | Pressure Instrument                                 |  |  | 1 |
| 208 | Alden 9519 Marine Radio Facsimile Recorder          |  |  | 1 |
| 209 | AN/URA-17 Converter-Comparator Front Panel Control  |  |  | 1 |

## SYSTEMS (CONT'D)

|     |  | SIGNATURE | DATE | PTS |
|-----|--|-----------|------|-----|
| 210 | R-1051/URR Front Panel Control                             |           |      | 1   |
| 211 | AN/UGC-20/25 (Teletype) Operator's Control                 |           |      | 1   |
| 212 | Interior Communications                                    |           |      | 1   |
| 213 | AN/SMQ-1/3 Radiosonde Receptor                             |           |      | 1   |
| 214 | J006A 403-MHz Radiosonde Transmitter                       |           |      | 1   |
| 215 | Battery-Testing  |           |      | 1   |
| 216 | Humidity Chamber (ML-428/UM)                               |           |      | 1   |
| 217 | Adiabatic Charts   |           |      | 1   |
| 218 | Balloon Inflation  |           |      | 1   |
| 219 | Radiosonde Computation                                     |           |      | 1   |
| 220 | AN/SMQ-6(V) Satellite-Tracking                             |           |      | 1   |
| 221 | AN/SMQ-6(V) Antenna  |           |      | 1   |
| 222 | AN/SMQ-6(V) Tape Recorder-Amplifier                        |           |      | 1   |
| 223 | AN/SMQ-6(V) Power and Distribution Control                 |           |      | 1   |
| 224 | AN/SMQ-6(V) Receiver                                       |           |      | 1   |
| 225 | RO-402/UMH Weather Data Facsimile Recorder                 |           |      | 1   |
| 226 | AN/SMQ-10 Satellite Readout Equipment                      |           |      | 1   |
| 227 | AN/SMQ-10 Port Receiver Unit Front Panel Control           |           |      | 1   |
| 228 | AN/SMQ-10 Simulator Unit Front Panel Control               |           |      | 1   |
| 229 | AN/SMQ-10 Starboard Receiver Unit Front Panel Control      |           |      | 1   |
| 230 | AN/SMQ-10 Antenna Control Unit Front Panel Control         |           |      | 1   |
| 231 | AN/SMQ-10 Display Data Processing Unit Front Panel Control |           |      | 1   |



## SYSTEMS (CONT'D)

|  | <u>SIGNATURE</u> | <u>DATE</u> | <u>PTS</u> |
|--|------------------|-------------|------------|
| 232 AN/SMQ-10 Hard Copy Generator Front Panel Control          |                  |             | <u>1</u>   |
| 233 AN/SMQ-10 Primary Power Front Panel Control                |                  |             | <u>1</u>   |
| 234 AN/SMQ-10 Teletypewriter Front Panel Control               |                  |             | <u>1</u>   |
| 235 Frequency Shift Converter (CV-1066/UX) Front Panel Control |                  |             | <u>1</u>   |
| 236 Frequency Shift Converter (CV-2979/UX) Front Panel Control |                  |             | <u>1</u>   |
| 237 SG-21 B/U AF Signal Generator                              |                  |             | <u>1</u>   |
| 238 Integrated Refractive Effects Prediction Support (IREPS)   |                  |             | <u>1</u>   |
| 239 Alden Facsimile Recorder (9500)                            |                  |             | <u>1</u>   |

## References:

- a. Aerographer's Mate 3 & 2 (NAVEDTRA 10363)
- b. Aerographer's Mate 1 & C (NAVEDTRA 10362)
- c. OPNAVINST 3160.17
- d. OCEANO Log 3167/1 (6-72)
- e. Occupational Standards with References, Programmed Instructions, and Job Qualification Requirements Listing (LPO-REF-001)
- f. NAVOCEANCOMINST 3140.1

## .1 Discuss the following:

- a. Purpose of BT observation program
- b. Rate of fall
- c. Frequency of observations
- d. Evaluation of BT trace
- e. BT log worksheet
- f. Reportable values
- g. Transmission of observations

## References:

- a. Aerographer's Mate 3 & 2 (NAVEDTRA 10363)
- b. FMH-1B (NAVAIR 50-1D-1)
- c. Analog/Digital Weather Graphic Recorder (Model 9519)
- d. FMH-2 (NAVAIR 50-1D-2)
- e. FMH-4 (NAVAIR 50-1D-4)
- f. FMH-6 (NAVAIR 50-1D-6)
- g. Basic Electronics (NAVEDTRA 10087)
- h. IC Electrician 3 & 2 (NAVEDTRA 10558)
- i. NAVOCEANCOMINST 3143.1
- j. Occupational Standards with References, Programmed Instructions, and Job Qualification Requirements Listing (LPO-REF-001)
- k. NAVOCEANCOMINST 2304.1
- l. Meteorological Ballistics (NWRP-42-0665-105)
- m. Information Security Program Regulation (OPNAVINST 5510.1F)
- n. Security Manager's Handbook (OPNAVINST 5430.48A)
- o. Navy Safety Precautions for Forces Afloat (OPNAVINST 5100.19)
- p. COMNAVSURFLANT/COMNAVSURFPAC Instruction 3840.1A Joint Surface Manual

.1 Explain how and when the following communications equipment is used:

- a. Alden facsimile
- b. Internal teletype
- c. UGC-20/25 teletype (external)
- d. R1051 receiver
- e. Converter
- f. Switchboards
- g. Filter assembly/patch panel
- h. 19MC
- i. Pneumatic tubes
- j. Sound-powered telephones
- k. Lower frequencies (facsimile/teletypewriter (FAX/TTY))
- l. Higher frequencies (FAX/TTY)
- m. 14TV2 teleprinter and monitor
- n. Antenna coupler group
- o. R-390 radio receiver
- p. AN/WRR-3B radio receiver
- q. AN/UGC-91 teletype (external)
- r. C-6/C-9 TV system closed circuit briefing system
- s. AN/UGR-9 teletype (external)

.2 Discuss the format of the following messages:

- a. Optimum track ships routing (OTSR)
- b. Radiosonde observation
- c. Upper wind observation
- d. Synoptic observation
- e. Bathythermograph observation
- f. Plain language terminal forecast (PLATF) code
- g. Operational forecasts
- h. Reconnaissance reporting code (RECCO) reports
- i. NATO ballistic message

.3 Explain the operation, maintenance and support provided for the Alden facsimile.

## References:

- a. Aerographer's Mate 3 & 2 (NAVEDTRA 10363)
- b. Occupational Standards with References, Programmed Instructions, and Job Qualification Requirements Listing (LPO-REF-001)
- c. Aerographer's Mate 1 & C (NAVEDTRA 10362)
- d. Observing and Forecasting Oceanic Sea and Waves (Hydrographic Office 603)

## .1 Discuss the following:

- a. Earth-sun relationship
- b. Greenhouse effect
- c. Standard atmosphere
- d. Three-cell circulation theory
- e. Secondary circulation
- f. Tertiary circulation
- g. Air masses
- h. Types of fronts
- i. Formation of fogs
- j. Thunderstorm formation
- k. Tropical storms
- l. Atmospheric physics
- m. Lapse rates and stability
- n. Life cycle of oceanic sea and swell waves
- o. General oceanography
- p. Sound ray theory
- q. Ocean thermal structure
- r. Ocean currents
- s. Drift analysis
- t. Surf principles and forecasting
- u. Oceanic heat budget
- v. Ocean thermal structure
- w. Ocean front and eddies
- x. Air-ocean interaction
- y. Land-sea percentages
- z. Moisture and clouds
- aa. Local wind effects and general circulation
- ab. Jet stream

## References:

- a. Aerographer's Mate 3 & 2 (NAVEDTRA 10363)
- b. FMH-1B (NAVAIR 50-1D-1)
- c. FMH-2 (NAVAIR 50-1D-2)
- d. International Cloud Atlas (NAVAIR 50-1D-509)
- e. Occupational Standards with References, Programmed Instructions, and Job Qualification Requirements Listing (LPO-REF-001)
- f. NAVOCEANCOMINST 3140.1
- g. NAVOCEANCOMINST 3144.1

## .1 Define and discuss the following:

- a. Clouds
- b. Ceiling
- c. Visibility
- d. Precipitation
- e. Cloud classification
- f. Stages
- g. Cloud types
- h. Stable and unstable conditions
- i. Partial obscuration
- j. Total obscuration
- k. Intensities of precipitation
- l. Weather element contractions
- m. Cloud entry contractions
- n. Type of observation
- o. Time of observation
- p. Greenwich mean time (GMT)

## .2 Define how the following information is derived:

- a. Ambient temperature
- b. Atmospheric pressure
- c. Cloud heights
- d. Surface winds
- e. Pressure altitude/density altitude
- f. Dewpoint and relative humidity
- g. Ship's position

## .3 Explain how and where the following information is entered on the Commander Naval Oceanographic Command (CNOC) Form 3140/8:

- a. Sky and ceiling
- b. Visibility
- c. Weather and obstruction to vision
- d. Temperature/dewpoint/seawater temperature
- e. Wind
- f. Pressure
- g. Sea/swell waves
- h. Synoptic data
- i. Remarks and supplemental data

## .4 Explain the frequency and reporting requirements for surface weather observations.

## References:

- a. FMH-3 (NAVAIR 50-1D-3)
- b. FMH-4 (NAVAIR 50-1D-4)
- c. FMH-5 (NAVAIR 50-1D-5)
- d. FMH-6 (NAVAIR 50-1D-6)
- e. Radiosonde Receptor AN/SMQ-1 (NAVAIR-50-30SMQ1-5)
- f. Ballistic Wind and Density for Naval Gunfire (OP-3784)
- g. Meteorological Ballistics (NWRF-42-0665-105)
- h. Occupational Standards with References, Programmed Instructions, and Job Qualification Requirements Listing (LPO-REF-001)

.1 Define and explain the following terms as applied to a baseline check:

- a. Visual inspection of the radiosonde
- b. Calibration chart
- c. Ordinate values
- d. Zero recording
- e. Sensitivity check
- f. Low reference
- g. Baseline check box
- h. Requirements of a baseline check
- i. Temperature and humidity evaluators
- j. Surface contact at release

.2 Define and explain the following adiabatic chart and recorder record parameters:

- a. Mandatory levels
- b. Significant levels
- c. Required level entries
- d. Inversions and supers
- e. Mean virtual temperature
- f. Pressure altitude
- g. Contact
- h. Extrapolations
- i. Tropopause
- j. Level entry abbreviations
- k. Flight termination
- l. Mission data abbreviations on trace/charts
- m. Calibration trace (monthly PMS)

.3 Define the following terms as applied to radiosonde transmitter terminology:

- a. Thermistor
- b. Hygristor
- c. Detent click value
- d. Baroswitch assembly
- e. Rainshield and air duct
- f. Test leads
- g. Antenna and frequency
- h. Test lead color code
- i. Preflight battery test

106      RADIOSONDE OBSERVATION FUNDAMENTALS (CONT'D)

.4      Define the following balloon terminology:

- a. Balloon storage
- b. Balloon conditioning methods
- c. Free lift
- d. Nozzle lift
- e. Rate of inflation
- f. Tying the neck
- g. Train assembly
- h. Train regulator
- i. Ascension rate
- j. Balloon release safety

.5      Define the upper air code and additional data groups:

- a. Mandatory levels
- b. Position on marsden square
- c. Date and time of observation
- d. Significant levels
- e. Tropopause group
- f. Supers and termination
- g. Missing data and extrapolated data

.6      Discuss the followings:

- a. At-sea wind observation procedures
- b. Refractivity
- c. Obtaining ballistic wind data
- d. Release time schedules
- e. Observation time schedules

## References:

- a. Aerographer's Mate 3 & 2 (NAVEDTRA 10363)
- b. Occupational Standards with References, Programmed Instructions, and Job Qualification Requirements Listing (LPO-REF-001)

## .1 Explain and/or define the following:

- a. Automatic picture transmission (APT)
- b. APT predict message
- c. APT terminal ground equipment
- d. Ascending node
- e. Ascending node time
- f. Degradation
- g. Descending node
- h. Distortion
- i. Earth synchronous orbit
- j. Infrared (IR)
- k. Nodal increment
- l. Nodal period
- m. Orbit
- n. Orbit number
- o. Subpoint
- p. Subpoint track
- q. Sun synchronous orbit
- r. Terminator
- s. Time after ascending node
- t. Tracking
- u. Tracking or plotting board
- v. Tracking diagram
- w. Tracking overlay
- x. Weather facsimile (WEFAX)
- y. Doppler effect



## References:

- a. DMSP User's Guide (AWS-TR-74-250)
- b. Data Processing/Antenna Positioning Subsystem Operator's Manual (NAVAIR 50-30SMQ10-1-5-6)
- c. AN/SMQ-10 Operation and Maintenance Manual (NAVAIR 50-30SMQ10-1)
- d. Digital Computer (NAVAIR 50-30SMQ10-1-5-4-8)
- e. Time-Code Generator Buffer (NAVAIR 50-30SMQ10-1-2-3)
- f. Demodulator/Bit Synchronizer (NAVAIR 50-30SMQ10-1-3-1)

## .1 Define the following terms:

- a. Antenna positioning subsystem (APS)
- b. Data processing subsystem (DPS)
- c. Debug
- d. Parity error
- e. Degauss tape
- f. Slew
- g. Real time
- h. Flight test vehicle (FTV)
- i. Ascending node
- j. Descending node
- k. Nodal longitude (LN)
- l. Nodal time (TN)
- m. Battle override
- n. Worldwide voice (WWV)
- o. Bit rate
- p. Signal threshold

## .2 Describe the purpose/use of the data memory data message (DMDM).

## .3 Describe base band equipment and how it is used.

## References:

- a. NAVOCEANCOMINST C3160.4
  - b. Aerographer's Mate 3 & 2 (NAVEDTRA 10363)
  - c. Occupational Standards with References, Programmed Instructions, and Job Qualification Requirements Listing (LPO-REF-001)
- .1 Explain the application of Snell's Law to refraction of sound.
  - .2 Define limiting ray as it applies to shadow zone, critical angle propagation.
  - .3 Depict the five basic velocity profiles showing the following:
    - a. Limiting ray
    - b. Shadow zone
  - .4 State the effects of varying sea conditions and bottom types on reflection.
  - .5 Define the following terms as used in antisubmarine warfare (ASW) products:
    - a. Alpha index
    - b. Ambient noise
    - c. Acoustic sensor range prediction (ASRAP)
    - d. Airborne expendable bathythermograph (AXBT)
    - e. Bathythermograph (BT)
    - f. Best depth
    - g. Bottom bounce
    - h. Convergence
    - i. Convergence zone
    - j. Critical angle
    - k. Density
    - l. Depth excess
    - m. Depth required
    - n. Frequency, sound
    - o. Gradient
    - p. In-layer/below-layer gradient
    - q. Isothermal
    - r. Isovelocity
    - s. Main thermocline
    - t. Passive/active sonar
    - u. Pressure
    - v. Propagation loss
    - w. Ray path
    - x. Refraction
    - y. Salinity
    - z. Scattering
    - aa. Sea state
    - ab. Shadow zone
    - ac. Shallow water
    - ad. Ships/helicopter acoustic range prediction system (SHARPS)
    - ae. Snell's Law

- af. Sonic layer depth (SLD)
- ag. Sonobuoy
- ah. Sound channel
- ai. Sound velocity
- aj. Source level
- ak. Surface duct
- al. Thermocline
- am. Thermocline gradient
- an. Environmental variability
- ao. Wave height
- ap. Expendable bathythermograph (XBT)
- aq. Predesignated high-interest tactical area ranges (PHITAR)
- ar. Bathythermograph (BT) log
- as. Integrated command ASW program (ICAP)
- at. Mixed layer depth (MLD)
- au. Shipboard expendable bathythermograph (SXBT)
- av. Transients
- aw. Acoustic product request (APR)
- ax. Acoustic variability
- ay. Active/passive sonar equations
- az. Basic hull mounted and towed array sonar systems
- ba. Submarine characteristics

.6 Describe the use of the following messages/worksheets:

- a. Active ASRAP
- b. SHARPS
- c. PHITAR/passive
- d. ICAP

## References:

- a. COMNAVOCEANCOM Tactical Support Products Manual (U) Volume 1 (NAVOCEANCOMINST 3160.4)
- b. Aerographer's Mate 1 & C (NAVEDTRA 10362)
- c. Naval Ocean Systems Center (NOSC) Technical Document 481

- .1 Discuss the following:
  - a. IREPS/EM system
  - b. Coverage diagram and its use
  - c. Loss diagram and its use
- .2 Explain what atmospheric conditions are needed for the following:
  - a. Evaporative duct
  - b. Surface duct
  - c. Elevated (aloft) duct
- .3 Explain how surface and airborne platforms can be maneuvered to cover holes or benefit from them.
- .4 Explain how the officer in tactical command can use extended ranges to his benefit.
- .5 Explain where jammer-type aircraft should be placed for maximum benefits.

## References:

- a. Aerographer's Mate 3 & 2 (NAVEDTRA 10363)
- b. Occupational Standards with References, Programmed Instructions, and Job Qualification Requirements Listing (LPO-REF-001)

## .1 Describe the scope and service use of the following:

- a. Defense Mapping Agency Catalog of Maps, Charts, and Related Products, Part 2, Vol II - Weather Plotting Charts (NAVAIR 50-1G-518)
- b. DD Forms 1348-1, 1348-6, 1149, and 1250
- c. Servmart
- d. Operating target (OPTAR)
- e. Meteorological stock points
- f. 13-digit national stock numbers
- g. Inventory
- h. NAVSUP 2002
- i. Meteorological Equipment for Navy Meteorological Units (NAVAIR 00-35QL-22)
- j. Seamart

## .2 Discuss the following publications and their uses:

- a. NAVOCEANCOMINST 3140.1
- b. SECNAVINST 5210.11 SSIC
- c. OCEANAVINST 5212.1
- d. OPNAVINST 3120.22

## .3 Discuss the following records and reports:

- a. Commander Naval Oceanographic Command (CNOC) Form 3140/6
- b. CNOC Form 3140/10
- c. Enlisted Distribution Verification List (EDVR) 1080-1

## .4 Discuss the following:

- a. Office filing
- b. Preparation of forms
- c. Security and classification of weather messages
- d. Preparation of standard Navy correspondence

## Reference:

a. OPNAVINST 5510.1

## .1 Identify and define the following types and/or terms of security:

- a. Physical
- b. Transmission
- c. Personal
- d. CRYPTO
- e. Communications
- f. Classifications
- g. Clearances
- h. Areas
- i. Classified material storage (CMS)

## .2 Define the following terms as applied to communications security:

- a. Handling
- b. Stowage
- c. Destruction

## .3 Describe the following as applied to emergency destruction:

- a. Priority of destruction
- b. Authority to destroy
- c. Methods of destruction

## References:

- a. Navy Safety Precautions for Forces Afloat (OPNAVINST 5100.19)
- b. Standard Organization and Regulations of the U.S. Navy (OPNAVINST 3120.32)
- c. Accident Prevention Manual (OPNAVINST 5101.2)
- d. Standard First-Aid Training Course (NAVEDTRA 10081)

- .1 Explain how various levels of electrical potential affect current flow through the body.
- .2 Explain how variations in environmental conditions affect body resistance.
- .3 Explain how electrical shock can be prevented when working on an energized circuit.
- .4 Explain the purpose of insulating material and describe its application to personnel protection.
- .5 Explain proper procedures to be observed when using test equipment.
- .6 Explain the procedure to be followed prior to working on electrical machinery or equipment.
- .7 Explain how a shorting bar is used to discharge capacitors.
- .8 Explain the use of interlocks installed in/on electrical equipment.
- .9 Explain the purpose and use of danger tags/caution tags.
- .10 Describe proper replacement of fuses.
- .11 Describe the safety precautions applicable to portable electrical equipment.
- .12 Describe the dangers of open electrical circuits due to environmental conditions.
- .13 Explain the procedures to be followed when combating an electrical fire.
- .14 Name the agents to be used for fighting electrical fires and explain the proper application of each.
- .15 Explain the desirable characteristics of a good cleaning agent for electrical equipment.
- .16 Name the desirable cleaning agents for electrical equipment.
- .17 Describe the hazards which can be encountered with cleaning agents due to environmental conditions.
- .18 Explain the procedures for removing a victim from an energized circuit.

113     SAFETY PRECAUTIONS FUNDAMENTALS (CONT'D)

- .19 Explain the proper treatment for electrical shock.
- .20 Describe the proper procedures for the preferred method of artificial respiration and cardiac massage.
- .21 Explain the proper procedure for treating burns and wounds.
- .22 Explain the proper procedure for neutralizing and removing acid from skin and eyes.
- .23 Describe and explain the following as applied to going aloft:
  - a. Safety harness
  - b. Notification of intent to go aloft (going aloft chit)
  - c. Securing circuits/tag-out requirements
- .24 Discuss the eight basic accident cause factors as defined in the Accident Prevention Manual.



## References:

- a. NAVOCEANCOMINST 3140.1
- b. Aerographer's Mate 3 & 2 (NAVEDTRA 10363)
- c. Aerographer's Mate 1 & C (NAVEDTRA 10362)
- d. Evaluating and Encoding BT Data (NWS-AG-A-050)

## 201.1 What is the function of this system?

- .11 Refer to a standard print of this system or to the actual equipment.
- .12 Refer to notes, cautions, and warnings as stated in MIMs and MRCs.

201.2 SYSTEM COMPONENTS AND COMPONENT PARTS

Discuss the designated items for the following components and component parts:

- A. What is its function?
- B. Where is it located?
- C. What is the source of power?
- D. What are the modes of operation or control?
- E. What are the safety/protective devices?
- F. What protection is provided by it?
- G. What are the probable indications if this component fails?
- H. What is the source of control signals?
- I. What are the positions and functions of each position?

|                         | A | B | C | D | E | F | G | H | I |
|-------------------------|---|---|---|---|---|---|---|---|---|
| .21 Canister            | X |   | X |   |   |   | X | X |   |
| a. Pin                  | X | X |   |   |   |   |   |   | X |
| .22 Launcher            | X | X | X | X |   |   |   |   |   |
| a. Breech               | X | X | X | X |   |   | X |   | X |
| b. Ball valve           | X | X |   | X |   |   | X |   | X |
| .23 Recorder            | X | X | X |   | X | X | X |   |   |
| a. Pen assembly         | X | X |   |   |   |   | X | X | X |
| b. Chart                | X | X |   |   |   |   |   |   |   |
| c. Chart drive assembly | X | X |   |   |   |   | X |   |   |
| d. Fast-feed switch     | X | X |   | X |   |   | X |   | X |
| e. Calibration switch   | X | X |   |   |   |   | X |   | X |
| f. Indicator lights (2) | X | X |   |   |   |   | X |   |   |
| g. Paper holders (2)    | X | X |   |   |   |   |   |   |   |
| h. Power switch         | X | X |   |   |   |   | X |   | X |

201.3 PRINCIPLES OF OPERATION

- .31 How do the components work together to achieve the system's function?
- .32 What indications will you receive if the system is malfunctioning?

201.4 PARAMETERS - None to be discussed.

201.5 SYSTEM INTERFACE

.51 How do the following outside influences affect this system:

- a. Excessive speed of ship
- b. Fluctuation of power
- c. High sea state
- d. Poor grounding
- e. Power surge
- f. Loss of power

201.6 SAFETY PRECAUTIONS

.61 What general safety precautions (as described in MIMs, MRCs, etc.) apply to this system?

Reference:

- a. Manufacturer's Technical Manual

202.1    What is the function of this system?

- .11 Refer to a standard print of this system or to the actual equipment.

202.2    SYSTEM COMPONENTS AND COMPONENT PARTS

Discuss the designated items for the following components and component parts:

- A. What is its function?
- B. Where is it located?

- .21 Motor speed control
- .22 Drum engaging lever
- .23 Power switch
- .24 Standby/monitor/talk switch
- .25 Power lamp
- .26 Fuse
- .27 Start phase switch
- .28 Function selector
- .29 Contrast control
- .210 Signal level meter
- .211 Gain control
- .212 Earphone jack
- .213 Radio receiver jack
- .214 Carbon mike jack
- .215 Radio transmitter jack
- .216 Motor jack
- .217 Line jack
- .218 Line binding post

202.3    PRINCIPLES OF OPERATION - None to be discussed.

202.4    PARAMETERS - None to be discussed.

202.5    SYSTEM INTERFACE

- .51 How do the following outside influences affect this system:
  - a. Power fluctuation
  - b. Power surge
  - c. Loss of power

202.6    SAFETY PRECAUTIONS

- .61 What general safety precautions (as described in MIMs, MRCs, etc.) apply to this system?

203 METEOROLOGICAL CHART SYSTEM

203

References:

- a. NAVAIR 50-1G-518
- b. Aerographer's Mate 3 & 2 (NAVEDTRA 10363)

203.1 What is the function of this system?

- .11 Refer to a standard print of this system or to the actual equipment.

203.2 SYSTEM COMPONENTS AND COMPONENT PARTS

Discuss the designated items for the following components and component parts:

A. What is its function?

- .21 Radiological fallout (RADFO) diagram
- .22 Skew temperature (Skew-T), logarithmic pressure (Log-P) diagram
- .23 Department of Defense (DOD) weather plotting chart

203.3 PRINCIPLES OF OPERATION - None to be discussed.

203.4 PARAMETERS - None to be discussed.

203.5 SYSTEM INTERFACE

.51 How do the following outside influences affect this system:

- a. Loss of power
- b. Loss of data
- c. Missing or doubtful data

203.6 SAFETY PRECAUTIONS

- .61 What general safety precautions (as described in MIMs, MRCs, etc.) apply to this system?

## References:

- a. Aerographer's Mate 3 & 2 (NAVEDTRA 10363)
- b. Temperature Instruments and Observations (NWS-AG-A-079)

204.1 What is the function of this system?

- .11 Refer to a standard print of this system or to the actual equipment.

204.2 SYSTEM COMPONENTS AND COMPONENT PARTS

Discuss the designated items for the following components and component parts:

- A. What is its function?
- B. Where is it located?
- C. What is the source of power?
- D. What are the modes of operation or control?
- E. What are the safety/protective devices?
- F. What protection is provided by it?
- G. What are the probable indications if this component fails?
- H. What are the positions and functions of each position?

|  | A | B | C | D | E | F | G | H |
|--|---|---|---|---|---|---|---|---|
| .21 Electric psychrometer (ML-450A/UM) | X |   | X | X | X | X | X | X |
| a. Thermometer holder                  | X | X |   |   |   |   | X |   |
| b. Sliding air intake                  | X | X |   |   |   |   | X | X |
| c. Battery compartment                 | X | X |   |   |   |   |   |   |
| d. Rheostat switch                     | X | X |   |   |   |   |   | X |
| e. Exhaust ports                       | X | X |   |   |   |   |   | X |
| f. Electric fan                        | X | X | X | X |   |   | X |   |
| g. Water bottle                        | X | X |   |   |   |   |   |   |
| h. Spring contact                      | X | X |   |   |   |   | X |   |
| i. Sliding door                        | X | X |   | X |   |   |   | X |
| .22 Sling psychrometer                 | X | X | X | X |   |   |   | X |
| a. Sling attachment                    | X | X |   |   |   |   |   |   |
| b. Wet-bulb thermometer                | X | X |   | X |   |   | X |   |
| c. Dry-bulb thermometer                | X | X |   | X |   |   | X |   |
| d. Grip                                | X | X |   |   |   |   |   |   |
| e. Snap-link                           | X | X |   |   |   |   |   |   |
| f. Swivel                              | X | X |   |   |   |   |   |   |
| .23 Psychrometric computer (CP-165/UX) | X | X |   | X |   |   |   | X |

204.3 PRINCIPLES OF OPERATION - None to be discussed.

204.4 PARAMETERS - None to be discussed.

204.5 SYSTEM INTERFACE - None to be discussed.

204.6 SAFETY PRECAUTIONS

- .61 What general safety precautions (as described in MIMs, MRCs, etc.) apply to this system?

- a. Aerographer's Mate 3 & 2 (NAVEDTRA 10363)
- b. Basic Meteorological Equipment (NWS-AG-J-036 A/V)
- c. Wind Observation (NWS-AG-A-076)

- ## 205.2 SYSTEM COMPONENTS AND COMPONENT PARTS

- A. What is its function?
- B. Where is it located?
- C. What is the source of power?
- D. What are the modes of operation or control?
- E. What are the safety/protective devices?
- F. What protection is provided by it?

- |   | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| X | X | X |   |   |   |   |
| X | X |   |   |   |   |   |
| X | X |   |   |   |   |   |
| X | X | X |   |   |   |   |
| X | X |   | X |   |   |   |
| X | X |   | X | X |   |   |
| X | X |   |   |   |   |   |
| X | X |   | X | X | X |   |
| X | X |   |   | X |   |   |
| X | X |   |   |   |   |   |
| X | X |   |   |   |   |   |
| X | X |   | X |   |   |   |

- .31 How do the components work together to achieve the system's function?
- .32 What is the sequence of component involvement to initiate/accomplish a true-wind reading?

## 205.5 SYSTEM INTERFACE

- a. Freezing precipitation
- b. Wind in excess of 60 knots
- c. Power fluctuation
- d. Power surge
- e. Loss of power

205.6 SAFETY PRECAUTIONS

- .61 What general safety precautions (as described in MIMs, MRCs, etc.) apply to this system?

## References:

- a. FMH-3 (NAVAIR 50-1D-3)
- b. Aerographer's Mate 3 & 2 (NAVEDTRA 10363)
- c. Basic Meteorological Equipment (NWS-AG-J-036 A/V)

## 206.1 What is the function of this system?

- .11 Refer to a standard print of this system or to the actual equipment.
- .12 Refer to notes, cautions, and warnings as stated in MIMs and MRCs.

206.2 SYSTEM COMPONENTS AND COMPONENT PARTS

Discuss the designated items for the following components and component parts:

- A. What is its function?
- B. Where is it located?
- C. What are the modes of operation or control?
- D. What are the safety/protective devices?
- E. What protection is provided by it?
- F. What are the probable indications if this component fails?

|                                      | A | B | C | D | E | F |
|--------------------------------------|---|---|---|---|---|---|
| .21 Ceiling light projector (ML-121) | X | X | X | X | X | X |
| a. Lamp                              | X | X |   |   |   | X |
| b. Primary reflector                 | X | X |   |   |   | X |
| c. Secondary reflector               | X | X |   |   |   | X |
| .22 Clinometer (ML-119/ML-591/U)     | X | X | X |   |   | X |
| .23 Ceiling balloon                  | X | X | X | X | X | X |

206.3 PRINCIPLES OF OPERATION

- .31 How do the components work together to achieve the system's function?
- .32 What indications will you receive if the system is malfunctioning?

206.4 PARAMETERS

For the items listed answer the following questions:

- A. What are the normal operating values and tolerances?
- B. Where are the parameters sensed or monitored?
- .41 Cloud coverage/height

206.5 SYSTEM INTERFACE

- .51 How do the following outside influences affect this system:
  - a. Power fluctuation
  - b. Power surge
  - c. Loss of power
- .52 How does this system interface with surface weather observations?



206.6 SAFETY PRECAUTIONS

- .61 What general safety precautions (as described in MIMs, MRCs, etc.) apply to this system?
- .62 What special safety precautions apply to the balloon inflation rate?

207 PRESSURE INSTRUMENT SYSTEM

207

References:

- a. Aerographer's Mate 3 & 2 (NAVEDTRA 10363)
- b. NAVAIR 50-1D-510
- c. Basic Meteorological Equipment (NWS-AG-J-036 A/V)
- d. NAVAIR 50-30BIC

207.1 What is the function of this system?

.11 Refer to a standard print of this system or to the actual equipment.

207.2 SYSTEM COMPONENTS AND COMPONENT PARTS

Discuss the designated items for the following components and component parts:

- A. What is its function?
- B. Where is it located?
- C. What are the modes of operation or control?
- D. What are the safety/protective devices?
- E. What protection is provided by it?
- F. What are the probable indications if this component fails?

|   | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| .21 Marine barograph                      | X | X | X | X | X |   |
| a. Case                                   | X |   |   |   |   |   |
| b. Chart drive assembly                   | X | X | X |   |   | X |
| c. Hose connector                         | X | X |   |   |   |   |
| d. Base                                   | X | X |   |   |   |   |
| e. Pen shaft assembly                     | X | X | X |   |   | X |
| f. Pressure adjustment knob               | X | X | X |   |   |   |
| .22 Aneroid barometer (ML-448/UM)         | X | X | X | X | X | X |
| .23 Density altitude computer (CP-718/UR) | X | X | X |   |   |   |

207.3 PRINCIPLES OF OPERATION

.31 What indications will you receive if the system is malfunctioning?

207.4 PARAMETERS

For the items listed answer the following questions:

- A. What are the normal operating values and tolerances?
- B. What is the physical location of the indicators?

- .41 Time
- .42 Pressure

207.5 SYSTEM INTERFACE - None to be discussed.

207.6 SAFETY PRECAUTIONS

- .61 What general safety precautions (as described in MIMs, MRCs, etc.) apply to this system?
- .62 What special safety precautions apply to:
  - a. Handling
  - b. Overwinding

## References:

- a. Alden 1800 Analog/Digital Weather Graphics Recorder (Model 9500 series)
- b. Basic Meteorological Equipment (NWS-AG-J-036 A/V)
- c. Alden 9519 Marine Radio Facsimile Recorder

208.1 What is the function of this system?

- .11 Refer to a standard print of this system or to the actual equipment.

208.2 SYSTEM COMPONENTS AND COMPONENT PARTS

Discuss the designated items for the following components and component parts:

- A. What is its function?
- B. Where is it located?
- C. What are the positions and functions of each position?

.21 Electronic assembly 1 circuit card controls

- a. AGC on/off switch
- b. Normal base band switch
- c. Speed display indicator
- d. Manual speed selector
- e. Manual feed switch
- f. Tape clock selector
- g. FSK control switch
- h. Receiver tuning aid indicators
- i. Signal monitor indicator
- j. Gamma selector
- k. Test indicator
- l. Timer to start tone indicators

.22 Electronic assembly control panel

- a. Manual start button
- b. Manual stop button
- c. Fast-feed switch
- d. Signal source select switch
- e. Background control
- f. Mode select switch
- g. Satellite select switch
- h. Format select switch

.23 Recorder head

- a. Main power switch
- b. Manual paper advance switch
- c. Manual frame switch
- d. No paper indicator light

.24 Switchbox

- a. Fuse indicator off/ok (15 amp)
- b. Master off/on switch
- c. Indicator on/ok light
- d. Line level-out (LL-out), converter-out switch

208.3 PRINCIPLES OF OPERATION - None to be discussed.

208.4 PARAMETERS - None to be discussed.

208.5 SYSTEM INTERFACE

.51 How do the following outside influences affect this system:

- a. Poor signal reception
- b. Loss of power
- c. Loss of signal

208.6 SAFETY PRECAUTIONS

.61 What general safety precautions (as described in MIMs, MRCs, etc.) apply to this system?

## References:

- a. NAVSEA 0967-LP-034-9040
- b. Aerographer's Mate 3 & 2 (NAVEDTRA 10363)

209.1 What is the function of this system?

- .11 Refer to a standard print of this system or to the actual equipment.
- .12 Refer to notes, cautions, and warnings as stated in MIMs and MRCs.

209.2 SYSTEM COMPONENTS AND COMPONENT PARTS

Discuss the designated items for the following components and component parts:

- A. What is its function?
- B. Where is it located?
- C. What are the modes of operation or control?
- D. What are the safety/protective devices?
- E. What protection is provided by it?
- F. What are the probable indications if this component fails?
- G. What are the positions and functions of each position?

|                               | A | B | C | D | E | F | G |
|-------------------------------|---|---|---|---|---|---|---|
| .21 Power on/off switches (2) | X | X | X | X | X | X | X |
| .22 Power on lamps (2)        | X | X |   |   |   | X | X |
| .23 Level controls (2)        | X | X | X |   |   | X | X |
| .24 Shift switches (2)        | X | X | X |   |   | X | X |
| .25 Function switches (2)     | X | X | X |   |   | X | X |
| .26 Polarity switches (2)     | X | X | X |   |   | X | X |
| .27 Speed switches (2)        | X | X | X |   |   | X | X |
| .28 Fuses (4)                 | X | X |   |   |   | X |   |
| .29 Cathode-ray tube (CRT)    | X | X | X | X |   | X |   |

209.3 PRINCIPLES OF OPERATION

- .31 How do the components work together to achieve the system's function?
- .32 What indications will you receive if the system is malfunctioning?

209.4 PARAMETERS - None to be discussed.

209.5 SYSTEM INTERFACE

- .51 How does loss of power affect this system?
- .52 How does this system interface with the following:
  - a. Radio receivers
  - b. Teleprinters

209.6 SAFETY PRECAUTIONS

- .61 What general safety precautions (as described in MIMs, MRCs, etc.) apply to this system?

## 210 R-1051/URR FRONT PANEL CONTROL SYSTEM

210

### References:

- a. Manufacturer's Technical Manual
- b. Aerographer's Mate 3 & 2 (NAVEDTRA 10363)

### 210.1 What is the function of this system?

- .11 Refer to a standard print of this system or to the actual equipment.
- .12 Refer to notes, cautions, and warnings as stated in MIMs and MRCs.

### 210.2 SYSTEM COMPONENTS AND COMPONENT PARTS

Discuss the designated items for the following components and component parts:

- A. What is its function?
- B. Where is it located?
- C. What are the modes of operation or control?
- D. What are the safety/protective devices?
- E. What protection is provided by it?
- F. What are the probable indications if this component fails?
- G. What is the source of control signals?
- H. What are the positions and functions of each position?

|  | A | B | C | D | E | F | G | H |
|--|---|---|---|---|---|---|---|---|
| .21 Upper sideband (USB) phone jack                    | X | X | X |   |   | X | X | X |
| .22 Lower sideband (LSB) phone jack                    | X | X | X |   |   | X | X | X |
| .23 Fuses (2)  | X | X |   | X | X | X | X | X |
| .24 LSB line meter                                     | X | X | X |   |   | X | X |   |
| .25 LSB line level switch                              | X | X | X |   |   | X | X | X |
| .26 LSB line level control knob                        | X | X | X |   |   | X | X | X |
| .27 LSB phone level control knob                       | X | X | X |   |   | X | X | X |
| .28 Radiofrequency (RF) gain control                   | X | X | X |   |   | X | X | X |
| .29 Mode selector knob                                 | X | X | X |   |   | X | X | X |
| .210 USB phone level control knob                      | X | X | X |   |   | X | X | X |
| .211 Beat-frequency oscillator (BFO) frequency control | X | X | X |   |   | X | X | X |
| .212 USB line meter                                    | X | X |   |   |   | X | X | X |
| .213 USB line level switch                             | X | X | X |   |   | X | X | X |
| .214 USB line level control knob                       | X | X | X |   |   | X | X | X |
| .215 Cycles switch                                     | X | X | X |   |   | X | X | X |
| .216 Fine-tuning control knob                          | X | X | X |   |   | X | X | X |
| .217 Megahertz (MHz) and kilohertz (kHz) control knobs | X | X | X |   |   | X | X | X |

### 210.3 PRINCIPLES OF OPERATION

- .31 How do the components work together to achieve the system's function?
- .32 What indications will you receive if the system is malfunctioning?

### 210.4 PARAMETERS - None to be discussed.

210.5 SYSTEM INTERFACE

.51 How do the following outside influences affect this system:

- a. Power fluctuation
- b. Power surge
- c. Loss of power

.52 How does this system interface with the following:

- a. Teletype
- b. Facsimile machine
- c. Converter-comparator

210.6 SAFETY PRECAUTIONS

.61 What general safety precautions (as described in MIMs, MRCs, etc.) apply to this system?



211 AN/UGC-20/25 (TELETYPE) OPERATOR'S CONTROL SYSTEM

211

References:

- a. NAVSEA 0967-LP-623-0010
- b. NAVSEA 0967-LP-623-0020

211.1 What is the function of this system?

- .11 Refer to a standard print of this system or to the actual equipment.

211.2 SYSTEM COMPONENTS AND COMPONENT PARTS

Discuss the designated items for the following components and component parts:

- A. What is its function?
- B. Where is it located?
- C. What teletype applies to this component?

- .21 Keyboard transmitter
- .22 Transmitter distributor motor
- .23 Three-speed gearshift assembly
- .24 Automatic typer
- .25 AC distribution
- .26 Signal line (DC)
- .27 Fuses
- .28 Local carriage return function key
- .29 Local line feed function key
- .210 Repeat character key
- .211 Paper release lever
- .212 Double space line feed lever
- .213 End of line lamp
- .214 On/off switch
- .215 Front plate assembly
- .216 Hood release buttons

211.3 PRINCIPLES OF OPERATION - None to be discussed.

211.4 PARAMETERS - None to be discussed.

211.5 SYSTEM INTERFACE

- .51 How do the following outside influences affect this system:

- a. Power fluctuation
- b. Power surge
- c. Loss of power

211.6 SAFETY PRECAUTIONS

- .61 What general safety precautions (as described in MIMs, MRCs, etc.) apply to this system?

## References:

- a. IC Electrician 3 & 2 (NAVEDTRA 10558)
- b. Local Standard Operating Procedures

212.1 What is the function of this system?

- .11 Refer to a standard print of this system or to the actual equipment.

212.2 SYSTEM COMPONENTS AND COMPONENT PARTS

Discuss the designated items for the following components and component parts:

- A. What is its function?
- B. Where is it located?
- C. What is the source of power?
- D. What are the modes of operation or control?

.21 Sound-powered telephones

- a. Headphones
- b. Mouthpiece
- c. Mouthpiece button
- d. Phone jack

.22 Microphone control (1MC, 6MC, etc.)

- a. On/off switch
- b. Press-to-talk switch
- c. Individual station buttons
- d. Release button

.23 Loop teletype

- a. On/off switch
- b. Keyboard
- c. Local line feed/carriage return/paper feed
- d. Figures indicator
- e. Letters indicator

.24 Pneumatic tube

| A | B | C | D |
|---|---|---|---|
| X | X | X | X |
| X | X | X |   |
| X | X | X |   |
| X | X | X | X |
| X | X | X | X |
| X | X |   |   |
| X | X |   |   |
| X | X |   |   |
| X | X | X | X |
| X | X |   |   |
| X |   |   |   |
| X | X |   |   |
| X | X |   |   |
| X | X | X | X |

212.3 PRINCIPLES OF OPERATION - None to be discussed.212.4 PARAMETERS - None to be discussed.212.5 SYSTEM INTERFACE - None to be discussed.212.6 SAFETY PRECAUTIONS

- .61 What general safety precautions apply to this system?

## References:

- a. NAVAIR 50-30SMQ1-501
- b. Aerographer's Mate 3 & 2 (NAVEDTRA 10363)
- c. Aerographer's Mate 1 & C (NAVEDTRA 10362)
- d. FMH-3 (NAVAIR 50-1D-3)
- e. Guide For Supervision of Upper Air Observations (NWS-AG-J-046)

## 213.1 What is the function of this system?

- .11 Refer to a standard print of this system or to the actual equipment.
- .12 Refer to notes, cautions, and warnings as stated in MIMS and MRCs.

213.2 SYSTEM COMPONENTS AND COMPONENT PARTS

Discuss the designated items for the following components and component parts:

- A. What is its function?
- B. Where is it located?
- C. What is the source of power?
- D. What are the modes of operation or control?
- E. What are the safety/protective devices?
- F. What protection is provided by it?
- G. What are the probable indications if this component fails?
- H. What is the source of control signals?

- .21 Power supply panel (PP-1812/SMQ-1)
- .22 Antenna assembly
- .23 Receiver (radiosonde AN/SMQ-1)
- .24 Recorder (RO-71/SMQ-1)
- .25 Paper table

| A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|
| X | X | X | X | X | X | X | X |
| X | X | X | X |   |   | X | X |
| X | X | X | X |   |   | X | X |
| X | X | X |   |   |   | X |   |
| X | X |   |   |   |   |   |   |

213.3 PRINCIPLES OF OPERATION - None to be discussed.213.4 PARAMETERS

For the items listed answer the following questions:

- A. What are the normal operating values and tolerances?
- B. Where are the parameters sensed or monitored?
- C. What is the physical location of the indicators?

- .41 Signal strength
- .42 Receiver frequency

213.5 SYSTEM INTERFACE

- .51 How do the following outside influences affect this system:
  - a. Power fluctuation
  - b. Power surge
  - c. Loss of power

213.6 : SAFETY PRECAUTIONS

- .61 What general safety precautions (as described in MRCs) apply to this system?

214 J006A 403-MHz RADIOSONDE TRANSMITTER SYSTEM

214

References:

- a. FMH-3 (NAVAIR 50-1D-3)
- b. Aerographer's Mate 3 & 2 (NAVEDTRA 10363)
- c. Aerographer's Mate 1 & C (NAVEDTRA 10362)
- d. Radiosonde Transmitter J006A Operator's Guide

214.1 What is the function of this system?

- .11 Refer to a standard print of this system or to the actual equipment.

214.2 SYSTEM COMPONENTS AND COMPONENT PARTS

Discuss the designated items for the following components and component parts:

- A. What is its function?
- B. Where is it located?
- C. What is the source of power?
- D. What are the probable indications if this component fails?
- E. What are the positions and functions of each position?

|                             | A | B | C | D | E |
|-----------------------------|---|---|---|---|---|
| .21 Baroswitch section      | X | X | X | X | X |
| .22 Thermistor              | X | X | X | X |   |
| .23 Hygristor               | X | X | X | X |   |
| .24 Battery                 | X | X | X | X |   |
| .25 Calibration chart       | X | X |   |   |   |
| .26 Antenna                 | X | X |   | X | X |
| .27 Radiofrequency adjuster | X | X |   |   |   |

214.3 PRINCIPLES OF OPERATION

- .31 How do the components work together to achieve the system's function?
- .32 What indications will you receive if the system is malfunctioning?

214.4 PARAMETERS

For the items listed answer the following questions:

- A. What are the normal operating values and tolerances?
- B. Where are the parameters sensed or monitored?
- C. What is the physical location of the indicators?

|                 | A | B | C |
|-----------------|---|---|---|
| .41 Temperature | X | X |   |
| .42 Humidity    | X | X |   |
| .43 Pressure    | X | X | X |

214.5 SYSTEM INTERFACE

- .51 How do the following outside influences affect this system:
  - a. Power fluctuation
  - b. Power surge
  - c. Loss of power
- .52 How does this system interface with emission control (EMCON)?

214.6 SAFETY PRECAUTIONS

- .61 What general safety precautions (as described in MIMs, MRCs, etc.) apply to this system?
- .62 What special safety precautions apply:
  - a. To handling the transmitter
  - b. To activating the battery
  - c. When the calibration chart and baroswitch numbers do not correspond

215 BATTERY-TESTING SYSTEM

215

Reference:

- a. Test Set, Battery, AN/AMM-1 (NAVWEPS 16-45-633)

215.1 What is the function of this system?

- .11 Refer to a standard print of this system or to the actual equipment.

215.2 SYSTEM COMPONENTS AND COMPONENT PARTS

Discuss the designated items for the following components and component parts:

- A. What is its function?
- B. What is the source of power?
- C. What are the modes of operation or control?
- D. What are the probable indications if this component fails?
- E. What are the positions and functions of each position?

.21 AN/AMM-1 test set

.22 Twin-voltmeter battery test set

| A | B | C | D | E |
|---|---|---|---|---|
| X | X | X | X | X |
| X | X | X | X |   |

215.3 PRINCIPLES OF OPERATION - None to be discussed.

215.4 PARAMETERS - None to be discussed.

215.5 SYSTEM INTERFACE

.51 How do the following outside influences affect this system:

- a. Power fluctuation
- b. Power surge
- c. Loss of power

.52 How does this system interface with the radiosonde transmitter?

215.6 SAFETY PRECAUTIONS

.61 What general safety precautions (as described in MIMs, MRCs, etc.) apply to this system?

## References:

- a. Manufacturer's Technical Manual
- b. Aerographer's Mate 1 & C (NAVEDTRA 10362)
- c. FMH-3 (NAVAIR 50-1D-3)

## 216.1 What is the function of this system?

- .11 Refer to a standard print of this system or to the actual equipment.

216.2 SYSTEM COMPONENTS AND COMPONENT PARTS

Discuss the designated items for the following components and component parts:

- A. What is its function?
- B. Where is it located?
- C. What are the safety/protective devices?

|                               | A | B | C |
|-------------------------------|---|---|---|
| .21 Motor blower              | X | X | X |
| .22 Humidity control tray     | X | X |   |
| .23 Test leads                | X | X | X |
| .24 Psychrometer cup assembly | X | X |   |
| .25 Control box               | X | X |   |
| .26 Humidity control agent    | X | X |   |

216.3 PRINCIPLES OF OPERATION - None to be discussed.216.4 PARAMETERS - None to be discussed.216.5 SYSTEM INTERFACE

- .51 How do the following outside influences affect this system:

- a. Power fluctuation
- b. Power surge
- c. Loss of power

- .52 How does this system interface with the following:

- a. Radiosonde transmitter
- b. Satellite receiver

216.6 SAFETY PRECAUTIONS

- .61 What general safety precautions (as described in MIMs, MRCs, etc.) apply to this system?
- .62 What special safety precautions apply to connecting test leads?



## References:

- a. FMH-3 (NAVAIR 50-ID-3, Chap A-4)
- b. Guide For Supervision of Upper Air Observations (NWS-AG-J-046)

## 217.1 What is the function of this system?

- .11 Refer to a standard print of this system or to the actual equipment.

217.2 SYSTEM COMPONENTS AND COMPONENT PARTS

Discuss the designated items for the following components and component parts:

- A. What is its function?
- B. Where is it located?
- C. What is the source of data?

## .21 Chart A

- a. Data block A
- b. Surface observation data block
- c. Baseline check data block
- d. Early transmission data block
- e. Message data block
- f. Date and release time data block
- g. Isotherms
- h. Dry adiabats
- i. Relative humidity scale
- j. Pressure contact valve lines
- k. Thickness scales
- l. Constant-pressure level data
- m. Altitude scale
- n. Standard isobaric level plots
- o. Significant level plots
- p. Pressure altitude curve
- q. Temperature curve
- r. Relative humidity curve
- s. Stratum mean temperature data
- t. Dewpoint/dewpoint depression data

## .22 Chart B

- a. Data block B

## .23 Chart C

- a. Data block C

217.3 PRINCIPLES OF OPERATION

- .31 How do the components work together to achieve the system's function?
- .32 Which component is used below 400 mb?
- .33 Which components are used above 100 mb?

217.4 PARAMETERS

For the items listed answer the following questions:

- A. Where are the parameters sensed or monitored?
- B. What is the alarm setpoint?

.41 Superadiabatic lapse rate

217.5 SYSTEM INTERFACE - None to be discussed.

217.6 SAFETY PRECAUTIONS - None to be discussed.

## 218 BALLOON INFLATION SYSTEM

218-118

References:

- a. Aerographer's Mate 3 & 2 (NAVEDTRA 10363)
- b. FMH-3 (NAVAIR 50-ID-3)

218.1 What is the function of this system?

.11 Refer to a standard print of this system or to the actual equipment.

### 218.2 SYSTEM COMPONENTS AND COMPONENT PARTS

Discuss the designated items for the following components and component parts:

- A. What is its function?
- B. Where is it located?
- C. What are the safety/protective devices?
- D. What protection is provided by it?
- E. What are the probable indications if this component fails?
- F. What are the positions and functions of each position?

|                               | A | B | C | D | E | F |
|-------------------------------|---|---|---|---|---|---|
| .21 Balloon                   | X | X | X |   | X |   |
| a. 10-gram                    | X | X | X |   | X |   |
| b. 30-gram                    | X | X | X |   | X |   |
| c. 100-gram                   | X | X | X |   | X |   |
| d. 300-gram                   | X | X | X |   | X |   |
| e. 600-gram                   | X | X | X |   | X |   |
| .22 Gas cylinder              | X | X | X | X | X |   |
| a. Regulator                  | X | X | X |   | X | X |
| b. Hose                       | X | X |   |   | X |   |
| c. Reducing valve             | X | X | X | X | X | X |
| d. Helium                     | X | X | X | X | X |   |
| .23 Universal balloon balance | X | X |   |   |   | X |
| a. Weighted mounting post     | X | X |   |   |   | X |
| b. Weights                    | X | X |   |   |   | X |
| c. Nozzle                     | X | X |   |   |   | X |
| .24 Balloon train             | X | X |   |   | X | X |
| a. Train regulator            | X | X |   |   | X | X |
| b. Parachute                  | X | X |   |   | X | X |
| c. Transmitter                | X | X |   |   | X | X |
| d. Balloon shroud             | X | X |   | X |   |   |

### 218.3 PRINCIPLES OF OPERATION

.31 How do the components work together to achieve the system's function?

.32 What indications will you receive if the system is malfunctioning?

218.4 PARAMETERS

For the items listed answer the following questions:

- A. What are the normal operating values and tolerances?
- B. Where are the parameters sensed or monitored?
- C. What is the physical location of the indicators?
- D. What is the alarm setpoint?

.41 Gas pressure

218.5 SYSTEM INTERFACE - None to be discussed.

218.6 SAFETY PRECAUTIONS

- .61 What general safety precautions (as described in MIMs, MRCs, etc.) apply to this system?

219 RADIOSONDE COMPUTATION SYSTEM

219

References:

- a. FMH-3 (NAVAIR 50-ID-3)
- b. Guide for Supervision of Upper Air Observations (NWS-AG-A-046)

219.1 What is the function of this system?

- .11 Refer to a standard print of this system or to the actual equipment.

219.2 SYSTEM COMPONENTS AND COMPONENT PARTS

Discuss the designated items for the following components and component parts:

- A. What is its function?
- B. What are the modes of operation or control?
- C. What information is provided by this component?

- .21 Temperature evaluator
- .22 Relative humidity evaluator
- .23 Radiosonde observation tables
- .24 Dewpoint calculator

219.3 PRINCIPLES OF OPERATION - None to be discussed.

219.4 PARAMETERS - None to be discussed.

219.5 SYSTEM INTERFACE - None to be discussed.

219.6 SAFETY PRECAUTIONS

- .61 What general safety precautions (as described in MIMs, MRCs, etc.) apply to this system?

220 AN/SMQ-6(V) SATELLITE-TRACKING SYSTEM

220

References:

- a. NAVAIR 50-30SMQ6-1
- b. NAVAIR 50-30RO-1
- c. NAVAIR 50-30SMQ6-4
- d. Aerographer's Mate 3 & 2 (NAVEDTRA 10363)

220.1 What is the function of this system?

- .11 Refer to a standard print of this system or to the actual equipment.

220.2 SYSTEM COMPONENTS AND COMPONENT PARTS

Discuss the designated items for the following components and component parts:

- A. What is its function?
- B. Where is it located?
- C. What are the positions and functions of each position?

|  | A | B | C |
|--|---|---|---|
| .21 Antenna                                      | X | X | X |
| .22 Facsimile receiver-recorder                  | X |   | X |
| .23 Tape recorder-amplifier                      | X |   | X |
| .24 Power and distribution control               | X |   | X |
| .25 Receiver                                     | X |   | X |
| .26 Weather data facsimile recorder (RO-402/UMH) | X |   | X |

220.3 PRINCIPLES OF OPERATION

- .31 Using a diagram of the system, show the path of the satellite signal from the antenna to the facsimile recorder.

220.4 PARAMETERS - None to be discussed.

220.5 SYSTEM INTERFACE

- .51 How do the following outside influences affect this system:

- a. Power fluctuation
- b. Power surge
- c. Loss of power

220.6 SAFETY PRECAUTIONS

- .61 What general safety precautions (as described in MIMs, MRCs, etc.) apply to this system?

## References:

- a. NAVAIR 50-30SMQ6-6
- b. NAVAIR 50-30SMQ6-8
- c. NAVAIR 50-30SMQ6-9
- d. Aerographer's Mate 3 & 2 (NAVEDTRA 10363)

221.1 What is the function of this system?

.11 Refer to a standard print of this system or to the actual equipment.

221.2 SYSTEM COMPONENTS AND COMPONENT PARTS

Discuss the designated items for the following components and component parts:

- A. What is its function?
- B. Where is it located?
- C. What are the modes of operation or control?

|  | A | B | C |
|--|---|---|---|
| .21 Antenna pedestal (AB-1080/SMQ-6(V), 2559/SMQ-6C, AB-1246/SMQ-6D) | X | X |   |
| .22 Steerable antenna (OE-181/SMQ-6C(V))                             | X | X | X |
| .23 Antenna control (C-7632/SMQ-6(V))                                | X | X |   |
| a. Heater switch   | X | X |   |
| b. Heater lamp   | X | X |   |
| c. 24V control fuse  | X | X |   |
| d. Heater fuse   | X | X |   |
| e. 115V line fuses   | X | X |   |
| f. Buzzer switch   | X | X |   |
| g. Interlock warning lamp  | X | X |   |
| h. Oscillator (OSC) control switch                                   | X | X |   |
| i. Bearing indicator (IND) switch                                    | X | X |   |
| j. Elevation (EL) limit lamp   | X | X |   |
| k. Bearing stowed switch   | X | X |   |
| l. Bearing stowed lamp   | X | X |   |
| m. EL stowed switch  | X | X |   |
| n. EL stowed lamp  | X | X |   |
| o. EL angle indicators   | X | X |   |
| p. EL switch   | X | X |   |
| q. True or relative bearing indicator                                | X | X |   |
| r. Turning rate control  | X | X |   |
| s. Clockwise (CW) lamp   | X | X |   |
| t. Bearing switch  | X | X |   |
| u. Counterclockwise (CCW) lamp                                       | X | X |   |
| v. Program-off-manual (PGM-OFF-MAN) switch                           | X | X |   |
| w. PGM-OFF-MAN lamp  | X | X |   |
| x. Program time dial and knob  | X | X |   |
| y. Pass direction switch   | X | X |   |
| z. Satellite altitude switch   | X | X |   |
| aa. Zenith EL angle  | X | X |   |
| ab. Zenith bearing dial and knob                                     | X | X |   |

## 221.2 SYSTEM COMPONENTS AND COMPONENT PARTS (CONT'D)

|  | A | B | C |
|--|---|---|---|
| .24 Antenna control unit (OE-181, OE-181A/SMQ-6C(V))   | X | X |   |
| a. Power pushbutton switch                             | X | X |   |
| b. Drive on/drive off pushbutton switch                | X | X |   |
| c. Rate pushbutton switch                              | X | X |   |
| d. Execute pushbutton switch                           | X | X |   |
| e. Stow/enabled pushbutton switch and indicator        | X | X |   |
| f. Manual/enabled pushbutton switch and indicator      | X | X |   |
| g. Program/enabled pushbutton switch and indicator     | X | X |   |
| h. Time to acquired indicator                          | X | X |   |
| i. Greenwich-mean-time (GMT) satellite crossing switch |   | X | X |
| j. Satellite inclination (INCL)-PASS switch            |   | X | X |
| k. Satellite longitude switch                          |   | X | X |
| l. Satellite altitude switch                           |   | X | X |
| m. GMT switch  |   | X | X |
| n. Ship's longitude switch                             |   | X | X |
| o. Ship's latitude switch                              |   | X | X |
| p. Antenna position (elevation) indicator              |   | X | X |
| q. Limit (elevation) indicator lamp                    |   | X | X |
| r. EL position switch                                  |   | X | X |
| s. Rate (elevation) control knob                       |   | X | X |
| t. Antenna position (azimuth (AZ)) indicator           |   | X | X |
| u. AZ position switch                                  |   | X | X |
| v. Rate (AZ) control knob                              |   | X | X |
| w. Test selector switch                                |   | X | X |
| x. Test meter  |   | X | X |
| y. Circuit breakers (CBs) (1, 2, and 3)                |   | X | X |
| .25 Antenna control (OE-181/SMQ-6D(V))                 |   | X | X |
| a. Warning horn  |   | X | X |
| b. Elevation display                                   |   | X | X |
| c. Azimuth display                                     |   | X | X |
| d. Indicator and switch indicator group                |   | X | X |
| e. Data and acquisition time display                   |   | X | X |
| f. Meter select switch                                 |   | X | X |
| g. Test switch   |   | X | X |
| h. Azimuth rate control                                |   | X | X |
| i. Elevation rate control                              |   | X | X |
| j. Polarization  |   | X | X |
| k. Keyboard keys                                       |   | X | X |

## 221.3 PRINCIPLES OF OPERATION - None to be discussed.

## 221.4 PARAMETERS

For the items listed answer the following questions:

- A. Where are the parameters sensed or monitored?
- B. What is the physical location of the indicators?
- C. What is the alarm setpoint?

.41 Antenna elevation

.42 Antenna AZ



221.5 SYSTEM INTERFACE

.51 How do the following outside influences affect this system:

- a. Power fluctuation
- b. Power surge
- c. Loss of power

221.6 SAFETY PRECAUTIONS

.61 What general safety precautions (as described in MIMs, MRCs, etc.) apply to this system?

## References:

- a. NAVAIR 50-30SMQ6-1
- b. Marantz Handbook of Instruction

222.1 What is the function of this system?

- .11 Refer to a standard print of this system or to the actual equipment.

222.2 SYSTEM COMPONENTS AND COMPONENT PARTS

Discuss the designated items for the following components and component parts:

- A. What is its function?
- B. Where is it located?
- C. What are the modes of operation or control?
- D. What is the source of control signals?
- E. What are the positions and functions of each position?

|  | A | B | C | D | E |
|--|---|---|---|---|---|
| .21 Magnetic tape recorder (RO-351/SMQ-6(V)) | X | X | X | X | X |
| a. Cueing meter and reset pushbutton         | X | X |   |   |   |
| b. Power lamp                                | X | X |   |   |   |
| c. Off/on switch                             | X | X |   |   |   |
| d. Remote-local switch                       | X | X |   |   |   |
| e. Slow-fast switch                          | X | X |   |   |   |
| f. Rewind pushbutton switch                  | X | X |   |   |   |
| g. Record pushbutton switch                  | X | X |   |   |   |
| h. Safety pushbutton switch                  | X | X |   |   |   |
| i. Stop pushbutton switch                    | X | X |   |   |   |
| j. Cue pushbutton switch                     | X | X |   |   |   |
| k. Play pushbutton switch                    | X | X |   |   |   |
| l. HI-FWD pushbutton switch                  | X | X |   |   |   |
| m. 3rd head - 4th head switch                | X | X |   |   |   |
| .22 Amplifier oscillator (AM-4969/SMQ-6(V))  | X | X |   |   |   |
| a. Equalizer switch                          | X | X | X |   |   |
| b. Meter and output switch                   | X | X | X |   |   |
| c. Volume unit (VU) meters CH1 and CH2       | X | X |   |   |   |
| d. Record selector switch                    | X | X | X |   |   |
| e. Record indicators                         | X | X |   |   |   |
| f. Power switch                              | X | X |   |   |   |
| g. Phone switch                              | X | X | X |   |   |
| h. Phone jack                                | X | X |   |   |   |
| i. Reproduce master control                  | X | X |   |   |   |
| j. Reproduce CH1 control                     | X | X |   |   |   |
| k. Reproduce CH2 control                     | X | X |   |   |   |
| l. Record auxiliary CH1 control              | X | X |   |   |   |
| m. Record auxiliary CH2 control              | X | X |   |   |   |
| n. Record microphone CH1 control             | X | X |   |   |   |
| o. Record microphone CH2 control             | X | X |   |   |   |
| p. Record master control                     | X | X |   |   |   |
| q. Microphone input jacks CH1 and CH2        | X | X |   |   |   |

222.2 SYSTEM COMPONENTS AND COMPONENT PARTS (CONT'D)

|                                       | A | B | C | D | E |
|---------------------------------------|---|---|---|---|---|
| .23 Stereo cassette deck (model 5220) | X | X | X | X | X |
| .24 Power on/off switch               | X | X |   |   |   |
| .25 Tape transport controls           | X | X |   |   |   |
| a. Eject button                       | X | X |   |   |   |
| b. Record button                      | X | X |   |   |   |
| c. Rewind button                      | X | X |   |   |   |
| d. Play button                        | X | X |   |   |   |
| e. Fast forward button                | X | X |   |   |   |
| f. Stop button                        | X | X |   |   |   |
| g. Pause button                       | X | X |   |   |   |
| .26 VU meters                         | X | X |   |   |   |
| .27 Input level control               | X | X |   |   |   |
| .28 Microphone jacks                  | X | X |   |   |   |
| .29 Dolby switches                    | X | X |   |   |   |
| .210 Bias equalization selector       | X | X |   |   |   |
| .211 Headphone jack                   | X | X |   |   |   |
| .212 Cassette compartment             | X | X |   |   |   |

222.3 PRINCIPLES OF OPERATION - None to be discussed.

222.4 PARAMETERS - None to be discussed.

222.5 SYSTEM INTERFACE

.51 How do the following outside influences affect this system:

- a. Power fluctuation
- b. Power surge
- c. Loss of power

222.6 SAFETY PRECAUTIONS

.61 What general safety precautions (as described in MIMs, MRCs, etc.) apply to this system?

223 AN/SMQ-6(V) POWER AND DISTRIBUTION CONTROL SYSTEM

223

Reference:

a. NAVAIR 50-30SMQ6-1

223.1 What is the function of this system?

.11 Refer to a standard print of this system or to the actual equipment.

223.2 SYSTEM COMPONENTS AND COMPONENT PARTS

Discuss the designated items for the following components and component parts:

- A. What is its function?
- B. Where is it located?
- C. What are the positions and functions of each position?

223.2 SYSTEM COMPONENTS AND COMPONENT PARTS (CONT'D)

|   | A | B | C |
|---|---|---|---|
| .21 External input and monitor receptacle | X | X |   |
| .23 Calibrator function switch            | X | X | X |
| .24 Clock error lamp                      | X | X |   |
| .25 Clock adjust wheels                   | X | X |   |
| .26 Greenwich-mean-time (GMT) clock       | X | X |   |
| .27 Primary power circuit breaker         | X | X |   |
| .28 +22V.5A fuse and +5V.5A fuse          | X | X |   |
| .29 Clock stop/start pushbutton switch    | X | X |   |
| .210 Total operate hours meter            | X | X |   |
| .211 Main power switch                    | X | X |   |
| .212 Power lamp                           | X | X |   |
| .213 Gray scale control                   | X | X |   |
| .214 Calibration lamp                     | X | X |   |
| .215 Precision power supply failure lamp  | X | X |   |
| .216 Manual-auto switch                   | X | X |   |

223.3 PRINCIPLES OF OPERATION - None to be discussed.

223.4 PARAMETERS - None to be discussed.

223.5 SYSTEM INTERFACE

.51 How do the following outside influences affect this system:

- a. Power fluctuation
- b. Power surge
- c. Loss of power

223.6 SAFETY PRECAUTIONS

.61 What general safety precautions (as described in MIMs, MRCs, etc.) apply to this system?

## References:

- a. NAVAIR 30-50SMQ6-1
- b. Aerographer's Mate 3 & 2 (NAVEDTRA 10363)

224.1 What is the function of this system?

- .11 Refer to a standard print of this system or to the actual equipment.

224.2 SYSTEM COMPONENTS AND COMPONENT PARTS

Discuss the designated items for the following components and component parts:

- A. What is its function?
- B. Where is it located?

- .21 Video level control
- .22 Voltage-controlled oscillator (VCO) zero screwdriver control
- .23 Audio level control
- .24 Frequency switch
- .25 Zero screwdriver control
- .26 Signal strength meter
- .27 Power switch and lamp
- .28 Lock loss lamp
- .29 1.5A 3AG fuse
- .210 Speaker

224.3 PRINCIPLES OF OPERATION - None to be discussed.

224.4 PARAMETERS - None to be discussed.

224.5 SYSTEM INTERFACE

- .51 How do the following outside influences affect this system:
  - a. Power fluctuation
  - b. Power surge
  - c. Loss of power

224.6 SAFETY PRECAUTIONS

- .61 What general safety precautions (as described in MIMs, MRCs, etc.) apply to this system?

## References:

- a. NAVAIR 50-30RO-1
- b. Aerographer's Mate 3 & 2 (NAVEDTRA 10363)

225.1 What is the function of this system?

- .11 Refer to a standard print of this system or to the actual equipment.

225.2 SYSTEM COMPONENTS AND COMPONENT PARTS

Discuss the designated items for the following components and component parts:

- A. What is its function?
- B. Where is it located?
- C. What are the positions and functions of each position?

|   | A | B | C |
|---|---|---|---|
| .21 Mode selection section  | X | X |   |
| a. Power on pushbutton switch   | X | X |   |
| b. Visual/IR switch   | X | X |   |
| c. Synchronize internal (SYNC-INT)/synchronize external (SYNC-EXT) switch     | X | X |   |
| d. Mode positive (MOD POS)/mode negative (MOD NEG) switch                     | X | X |   |
| e. Clear/standby switch   | X | X |   |
| f. Automatic picture transmission (APT)/weather facsimile (WEFAX) mode switch | X | X |   |
| g. High scanning radiometer (SR) mode switch                                  | X | X |   |
| h. High SR-expand mode switch   | X | X |   |
| i. Low SR mode switch   | X | X |   |
| j. Low SR-expand mode switch  | X | X |   |
| .22 Greenwich-mean-time (GMT) clock section                                   | X | X |   |
| a. Function control switch  | X | X |   |
| b. Lamp test or clock latch switch  | X | X | X |
| .23 Gridding section  | X | X |   |
| a. On switch  | X | X |   |
| b. Setup/gridding switch  | X | X |   |
| c. Set pushbutton switch  | X | X |   |
| d. Advance pushbutton switch  | X | X |   |
| e. Return pushbutton switch   | X | X |   |
| f. Speed control  | X | X |   |
| g. Grid alignment control   | X | X |   |
| h. Centering control  | X | X |   |
| i. Anode current indicator  | X | X |   |
| j. Brightness control   | X | X |   |
| .24 Print section   | X | X |   |
| a. Anode current indicator  | X | X |   |
| b. Darken print control   | X | X |   |
| c. Contrast control   | X | X |   |
| d. Event marker pushbutton switch   | X | X |   |
| e. Video selection switch   | X | X |   |
| f. Paper used indicator   | X | X | X |
| g. Development temperature indication   | X | X |   |

225.3 PRINCIPLES OF OPERATION - None to be discussed.

225.4 PARAMETERS - None to be discussed.

225.5 SYSTEM INTERFACE

.51 How do the following outside influences affect this system:

- a. Power fluctuation
- b. Power surge
- c. Loss of power

225.6 SAFETY PRECAUTIONS

.61 What general safety precautions (as described in MIMs, MRCs, etc.) apply to this system?

## References:

- a. NAVAIR 50-30SMQ10-1
- b. NAVAIR 50-30SMQ10-1-5-5
- c. NAVAIR 50-30SMQ1-7-1

226.1 What is the function of this system?

.11 Refer to a standard print of this system or to the actual equipment.

226.2 SYSTEM COMPONENTS AND COMPONENT PARTS

Discuss the designated items for the following components and component parts:

- A. What is its function?
- B. Where is it located?
- C. What is the source of power?
- D. What are the modes of operation or control?
- E. What are the safety/protective devices?
- F. What protection is provided by it?
- G. What is the source of control signals?
- H. What are the positions and functions of each position?

|   | A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|---|
| .21 Teletypewriter                                    | X | X | X | X | X |   |   |   |
| .22 Primary power unit                                | X | X | X |   |   | X | X |   |
| .23 Personnel safety unit                             | X | X |   |   |   |   | X |   |
| .24 Pedestal junction box                             | X | X | X |   |   |   | X |   |
| .25 Antenna assembly                                  | X | X | X |   |   |   | X |   |
| .26 Base band unit                                    | X | X | X |   |   |   |   |   |
| a. Base band receiver test set                        | X | X | X | X |   |   |   | X |
| b. Base band receiver                                 | X | X | X | X |   |   |   |   |
| c. 4V DC power supply                                 | X | X | X | X |   |   |   |   |
| d. 28V DC power supply                                | X | X | X |   |   |   |   |   |
| .27 Port receiver unit                                | X | X | X |   |   |   |   |   |
| a. Parametric amplifier down converter control panel  | X | X | X | X |   |   |   |   |
| b. Demodulator/bit synchronizer                       | X | X | X | X |   |   |   |   |
| c. Recorder-reproducer                                | X | X | X | X | X |   |   |   |
| d. Demodulator/bit synchronizer power supply assembly | X | X | X |   |   |   |   |   |
| .28 Simulator unit                                    | X | X | X |   |   |   |   |   |
| a. Oscilloscope                                       | X | X | X | X |   |   |   |   |
| b. Receiver/signal simulator patch panel              | X | X | X |   |   |   |   |   |
| c. Receiver/signal simulator control                  | X | X | X |   |   |   |   |   |
| d. Digital magnetic tape recorder-reproducer          | X | X | X | X |   |   |   |   |
| e. Tape search unit                                   | X | X | X |   |   |   |   |   |
| f. 28V DC unregulated power supply                    | X | X | X |   |   |   |   |   |
| .29 Starboard receiver unit                           | X | X | X |   |   |   |   |   |
| a. Parametric amplifier down converter control panel  | X | X | X |   |   |   |   | X |
| b. Demodulator/bit synchronizer                       | X | X | X |   |   |   |   |   |
| c. Time-code generator buffer                         | X | X | X | X |   |   |   |   |
| d. Servo power supply assembly                        | X | X | X |   |   |   |   |   |
| e. Demodulator/bit synchronizer power supply          | X | X | X |   |   |   |   |   |



## 226.2 SYSTEM COMPONENTS AND COMPONENT PARTS (CONT'D)

|  | A | B | C | D | E | F | G | H |
|--|---|---|---|---|---|---|---|---|
| .210 Antenna control unit                    | X | X | X | X |   |   |   |   |
| a. Power control and status panel            | X | X | X |   |   |   |   |   |
| b. Antenna control assembly                  | X | X | X | X | X |   |   |   |
| c. Antenna positioning computer              | X | X | X | X | X |   |   |   |
| d. Computer power supply assembly            | X | X | X |   |   |   |   |   |
| .211 Display data processing unit            | X | X | X | X |   |   |   |   |
| a. Digital magnetic tape recorder-reproducer | X | X | X | X |   |   |   |   |
| b. Display computer                          | X | X | X | X | X |   |   |   |
| c. Computer power supply assembly            | X | X | X |   |   |   |   |   |
| .212 Hard copy generator unit                | X | X | X | X |   |   |   |   |
| a. AC power control assembly                 | X | X | X |   | X |   |   |   |
| b. Display control panel                     | X | X | X | X | X | X |   |   |
| c. Optical assembly (camera)                 | X | X | X |   |   |   |   |   |
| d. Film processor                            | X | X | X |   |   |   |   |   |
| .213 Computer/display interface control unit | X | X | X | X | X |   |   |   |
| a. Display computer interface                | X | X | X |   |   |   |   |   |
| b. Decommulator                              | X | X | X | X | X |   |   |   |
| c. Display buffer                            | X | X | X |   |   |   |   |   |

## 226.3 PRINCIPLES OF OPERATION

- .31 How do the components work together to achieve the system's function?

## 226.4 PARAMETERS

For the items listed answer the following questions:

- What are the normal operating values and tolerances?
- Where are the parameters sensed or monitored?
- What is the physical location of the indicators?
- What is the alarm setpoint?

- Base band DC voltage
- Parametric amplifier temperature
- Receiver signal strength
- Primary power voltage
- Primary power frequency

## 226.5 SYSTEM INTERFACE

- .51 How do the following outside influences affect this system:
- Power fluctuation
  - Power surge
  - Loss of power

## 226.6 SAFETY PRECAUTIONS

- What general safety precautions (as described in MIMs, MRCs, etc.) apply to this system?
- What special safety precautions apply to the hazards of film processor mechanics and chemicals?

## References:

- a. NAVAIR 50-30SMQ-1-3-5
- b. NAVAIR 50-30SMQ10-1-3-1
- c. M-14-G Portable Recorder-Reproducer (NAVSEA 0992-LP-675-0001)

227.1 What is the function of this system?

- .11 Refer to a standard print of this system or to the actual equipment.

227.2 SYSTEM COMPONENTS AND COMPONENT PARTS

Discuss the designated items for the following components and component parts:

- A. What is its function?
- B. Where is it located?
- C. What protection is provided by it?
- D. What are the positions and functions of each position?

|                                       | A | B | C | D |
|---------------------------------------|---|---|---|---|
| .21 2A1 CB1 circuit breaker           | X | X | X |   |
| .22 2A1 CB2 circuit breaker           | X | X | X |   |
| .23 2A1 main power switch             | X | X |   |   |
| .24 2A1 stage one switch              | X | X |   |   |
| .25 2A1 stage two switch              | X | X |   |   |
| .26 2A2 data source switch            | X | X |   |   |
| .27 2A2 bit rate switch               | X | X |   | X |
| .28 2A2 loop bandwidth switch         | X | X |   | X |
| .29 2A2 meter select switch           | X | X |   | X |
| .210 2A2 frequency switch             | X | X |   | X |
| .211 2A2 loop disable button          | X | X |   |   |
| .212 2A2 frequency acquisition switch | X | X |   | X |
| .213 2A2 gain switch                  | X | X |   |   |
| .214 2A2 tuning switch                | X | X |   |   |
| .215 2A2 signal threshold switch      | X | X |   |   |
| .216 2A3 forward switch               | X | X |   |   |
| .217 2A3 stop switch                  | X | X |   |   |
| .218 2A3 record switch                | X | X |   |   |
| .219 2A3 fast-wind switch             | X | X |   |   |
| .220 2A3 reverse switch               | X | X |   |   |
| .221 2A3 fast-rewind switch           | X | X |   |   |
| .222 2A3 transport power switch       | X | X |   |   |
| .223 2A3 main power switch            | X | X |   |   |
| .224 2A3 tape speed switch            | X | X |   | X |

227.3 PRINCIPLES OF OPERATION - None to be discussed.

227.4 PARAMETERS - None to be discussed.

227.5 SYSTEM INTERFACE

- .51 How do the following outside influences affect this system:
- a. Power fluctuation
  - b. Power surge
  - c. Loss of power

227.6 SAFETY PRECAUTIONS

- .61 What general safety precautions (as described in MIMs, MRCs, etc.) apply to this system?

## References:

- a. Oscilloscope (NAVSEA 0967-LP-467-4010)
- b. NAVAIR 50-30SMQ10-1-4-1
- c. NAVAIR 50-30SMQ10-1-5-3
- d. NAVAIR 50-30SMQ10-1-3-6

228.1 What is the function of this system?

- .11 Refer to a standard print of this system or to the actual equipment.

228.2 SYSTEM COMPONENTS AND COMPONENT PARTS

Discuss the designated items for the following components and component parts:

- A. What is its function?
- B. Where is it located?
- C. What are the positions and functions of each position?

|  | A | B | C |
|--|---|---|---|
| .21 3A1 intensity control                                    | X | X |   |
| .22 3A1 power ON switch                                      | X | X |   |
| .23 3A1 focus control  | X | X |   |
| .24 3A1 horizontal position control                          | X | X |   |
| .25 3A1 vertical gain control                                | X | X |   |
| .26 3A1 delay vernier switch                                 | X | X |   |
| .27 3A1 beamfinder button                                    | X | X |   |
| .28 3A1 CH1 position control                                 | X | X |   |
| .29 3A1 CH2 position control                                 | X | X |   |
| .210 3A1 vertical mode switch                                | X | X |   |
| .211 3A1 volts/division (DIV) switch                         | X | X | X |
| .212 3A1 AC/ground (GND)/DC switch                           | X | X | X |
| .213 3A1 level switch  | X | X | X |
| .214 3A1 coupling switch                                     | X | X |   |
| .215 3A1 slope switch  | X | X | X |
| .216 3A1 source switch                                       | X | X | X |
| .217 3A1 time/division (DIV) switch                          | X | X | X |
| .218 3A1 level-horizontal gain switch                        | X | X |   |
| .219 3A3 oscillator switch                                   | X | X |   |
| .220 3A3 biphas/sweep switch                                 | X | X | X |
| .221 3A3 marker switch                                       | X | X | X |
| .222 3A3 attenuator dial                                     | X | X |   |
| .223 3A3 port/stbd/operate switch                            | X | X |   |
| .224 3A3 parametric amplifier (PAR AMP)/PROBE/DN CONU switch | X | X | X |
| .225 3A3 normal/reverse switch                               | X | X | X |
| .226 3A3 clock phase switch                                  | X | X | X |
| .227 3A3 active channel switch                               | X | X | X |
| .228 3A3 power switch  | X | X | X |
| .229 3A4 unit 1 track button                                 | X | X |   |
| .230 3A4 unit 2 track button                                 | X | X |   |
| .231 3A4 power key   | X | X |   |
| .232 3A5 advance/retard (ADV/RET) switch                     | X | X |   |

228.2 SYSTEM COMPONENTS AND COMPONENT PARTS (CONT'D)

|                                     | A | B | C |
|-------------------------------------|---|---|---|
| .233 3A5 start switch               | X | X | X |
| .234 3A5 timing switch              | X | X |   |
| .235 3A5 preset switch              | X | X | X |
| .236 3A5 mode switch                | X | X | X |
| .237 3A5 tape control switches      | X | X |   |
| .238 3A5 error bypass switch        | X | X |   |
| .239 3A5 start tape switches        | X | X | X |
| .240 3A5 stop tape switches         | X | X | X |
| .241 3A5 propagation decay switches | X | X |   |

228.3 PRINCIPLES OF OPERATION - None to be discussed.

228.4 PARAMETERS - None to be discussed.

228.5 SYSTEM INTERFACE

.51 How do the following outside influences affect this system:

- a. Power fluctuation
- b. Power surge
- c. Loss of power

228.6 SAFETY PRECAUTIONS

.61 What general safety precautions (as described in MIMs, MRCs, etc.) apply to this system?

## References:

- a. NAVAIR 50-30SMQ10-1-3-5
- b. NAVAIR 50-30SMQ10-1-3-1
- c. NAVAIR 50-30SMQ10-1-2-3

229.1 What is the function of this system?

- .11 Refer to a standard print of this system or to the actual equipment.

229.2 SYSTEM COMPONENTS AND COMPONENT PARTS

Discuss the designated items for the following components and component parts:

- A. What is its function?
- B. Where is it located?
- C. What protection is provided by it?
- D. What are the positions and functions of each position?

|   | A | B | C | D |
|---|---|---|---|---|
| .21 4A1 CB1 circuit breaker                                       | X | X | X |   |
| .22 4A1 CB2 circuit breaker                                       | X | X | X |   |
| .23 4A1 main power switch   | X | X |   |   |
| .24 4A1 stage one switch  | X | X |   |   |
| .25 4A1 stage two switch  | X | X |   |   |
| .26 4A2 data source switch  | X | X |   | X |
| .27 4A2 bit rate switch   | X | X |   | X |
| .28 4A2 loop bandwidth switch                                     | X | X |   | X |
| .29 4A2 meter select switch                                       | X | X |   | X |
| .210 4A2 frequency switch   | X | X |   | X |
| .211 4A2 loop disable button                                      | X | X |   |   |
| .212 4A2 frequency acquisition switch                             | X | X |   |   |
| .213 4A2 gain switch  | X | X |   |   |
| .214 4A2 tuning switch  | X | X |   |   |
| .215 4A2 signal threshold switch                                  | X | X |   |   |
| .216 4A3 synchronize switch                                       | X | X |   |   |
| .217 4A3 delay switch   | X | X |   | X |
| .218 4A3 display switch   | X | X |   |   |
| .219 4A3 volume control   | X | X |   |   |
| .220 4A3 worldwide voice/worldwide voice Hawaii (WWV/WWVH) switch | X | X |   |   |
| .221 4A3 ship/system switch                                       | X | X |   |   |
| .222 4A3 run/hold switch  | X | X |   |   |
| .223 4A3 load switch  | X | X |   |   |

229.3 PRINCIPLES OF OPERATION - None to be discussed.

229.4 PARAMETERS - None to be discussed.

229.5 SYSTEM INTERFACE

.51 How do the following outside influences affect this system:

- a. Power fluctuation
- b. Power surge
- c. Loss of power

229.6 SAFETY PRECAUTIONS

.61 What general safety precautions (as described in MIMs, MRCs, etc.) apply to this system?

230 AN/SMQ-10 ANTENNA CONTROL UNIT FRONT PANEL CONTROL SYSTEM

230

References:

- a. NAVAIR 50-30SMQ10-1-2-1
- b. NAVAIR 50-30SMQ10-1-2-2
- c. NAVAIR 50-30SMQ10-1-5-4

230.1 What is the function of this system?

- .11 Refer to a standard print of this system or to the actual equipment.

230.2 SYSTEM COMPONENTS AND COMPONENT PARTS

Discuss the designated items for the following components and component parts:

- A. What is its function?
- B. Where is it located?
- C. What protection is provided by it?
- D. What are the positions and functions of each position?

|   | A | B | C | D |
|---|---|---|---|---|
| .21 Port conical scan switch                        | X | X |   |   |
| .22 Port azimuth switch                             | X | X |   |   |
| .23 Port elevation switch                           | X | X |   |   |
| .24 Starboard conical scan switch                   | X | X |   |   |
| .25 Starboard azimuth switch                        | X | X |   |   |
| .26 Starboard elevation switch                      | X | X |   |   |
| .27 Synchronize switch                              | X | X | X |   |
| .28 Ship's inertial navigation system (SINS) switch | X | X | X |   |
| .29 Buzzer pushbutton                               | X | X |   |   |
| .210 Emergency off button                           | X | X | X |   |
| .211 Servo power switch                             | X | X | X |   |
| .212 Port azimuth limit switch                      | X | X |   |   |
| .213 Port elevation limit switch                    | X | X |   |   |
| .214 Starboard azimuth limit switch                 | X | X |   |   |
| .215 Starboard elevation limit switch               | X | X |   |   |
| .216 Deck-space switch                              | X | X |   | X |
| .217 Azimuth position handle                        | X | X |   |   |
| .218 Azimuth rate handle                            | X | X |   |   |
| .219 Elevation position handle                      | X | X |   |   |
| .220 Elevation rate handle                          | X | X |   |   |
| .221 Mode control switches                          | X | X |   | X |
| .222 Display register switches                      | X | X |   | X |
| .223 Program halt switches                          | X | X |   | X |
| .224 Sense switches                                 | X | X |   | X |
| .225 Auto-manual switch                             | X | X |   | X |
| .226 Boot enable switch                             | X | X |   | X |
| .227 Parity error inhibit (PE INHB) switch          | X | X |   | X |
| .228 Master clear (MA CLR) halt-run switch          | X | X |   | X |

230.3 PRINCIPLES OF OPERATION - None to be discussed.

230.4 PARAMETERS - None to be discussed.



230.5 SYSTEM INTERFACE

.51 How do the following outside influences affect this system:

- a. Power fluctuation
- b. Power surge
- c. Loss of power

230.6 SAFETY PRECAUTIONS

.61 What general safety precautions (as described in MIMs, MRCs, etc.) apply to this system?

231 AN/SMQ-10 DISPLAY DATA PROCESSING UNIT FRONT PANEL CONTROL SYSTEM

231

References:

- a. NAVAIR 50-30SMQ10-1-5-3
- b. NAVAIR 50-30SMQ10-1-5-4

231.1 What is the function of this system?

- .11 Refer to a standard print of this system or to the actual equipment.

231.2 SYSTEM COMPONENTS AND COMPONENT PARTS

Discuss the designated items for the following components and component parts:

- A. What is its function?
- B. Where is it located?
- C. What are the positions and functions of each position?

|  | A | B | C |
|--|---|---|---|
| .21 Unit 1 track button                    | X | X |   |
| .22 Unit 2 track button                    | X | X |   |
| .23 Power key                              | X | X |   |
| .24 Display register switches              | X | X | X |
| .25 Program halt switches                  | X | X | X |
| .26 Sense switches                         | X | X | X |
| .27 Auto-manual switch                     | X | X | X |
| .28 Boot enable switch                     | X | X | X |
| .29 Parity error inhibit (PE INHB) switch  | X | X | X |
| .210 Master clear (MA CLR) halt-run switch | X | X | X |

231.3 PRINCIPLES OF OPERATION

- .31 How do the components work together to achieve the system's function?

231.4 PARAMETERS - None to be discussed.

231.5 SYSTEM INTERFACE

- .51 How do the following outside influences affect this system:

- a. Power fluctuation
- b. Power surge
- c. Loss of power

231.6 SAFETY PRECAUTIONS

- .61 What general safety precautions (as described in MIMs, MRCs, etc.) apply to this system?

Reference:

- a. NAVAIR 50-30SMQ10-1-5-2

232.1 What is the function of this system?

- .11 Refer to a standard print of this system or to the actual equipment.

232.2 SYSTEM COMPONENTS AND COMPONENT PARTS

Discuss the designated items for the following components and component parts:

- A. What is its function?  
B. Where is it located?  
C. What are the positions and functions of each position?

|                                     | A | B | C |
|-------------------------------------|---|---|---|
| .21 Primary 3-phase power switch    | X | X |   |
| .22 Secondary AC power switches     | X | X |   |
| .23 Test pattern generator switches | X | X | X |
| .24 Display mode switches           | X | X | X |
| .25 Display clear button            | X | X |   |

232.3 PRINCIPLES OF OPERATION - None to be discussed.

232.4 PARAMETERS - None to be discussed.

232.5 SYSTEM INTERFACE

- .51 How do the following outside influences affect this system:

- a. Power fluctuation  
b. Power surge  
c. Loss of power

232.6 SAFETY PRECAUTIONS

- .61 What general safety precautions (as described in MIMs, MRCs, etc.) apply to this system?

235 FREQUENCY SHIFT CONVERTER (CV-1066/UX) FRONT PANEL CONTROL SYSTEM

235

Reference:

- a. Manufacturer's Technical Manual

235.1 What is the function of this system?

- .11 Refer to a standard print of this system or to the actual equipment.
- .12 Refer to notes, cautions, and warnings as stated in MIMs and MRCs.

235.2 SYSTEM COMPONENTS AND COMPONENT PARTS

Discuss the designated items for the following components and component parts:

- A. What is its function?
- B. Where is it located?
- C. What are the modes of operation or control?
- D. What are the safety/protective devices?
- E. What protection is provided by it?
- F. What are the probable indications if this component fails?
- G. What are the positions and functions of each position?

|                                    | A | B | C | D | E | F | G |
|------------------------------------|---|---|---|---|---|---|---|
| .21 Input level and power switches | X | X | X | X | X | X | X |
| .22 Volume control knob            | X | X | X | X | X | X | X |
| .23 Tuning knob                    | X | X | X | X | X | X | X |
| .24 Primary power fuses            | X | X |   | X | X | X |   |
| .25 Power indicating gauge         | X | X | X | X | X | X | X |

235.3 PRINCIPLES OF OPERATION

- .31 What indications will you receive if the system is malfunctioning?

235.4 PARAMETERS - None to be discussed.

235.5 SYSTEM INTERFACE

- .51 How do the following outside influences affect this system:

- a. Power fluctuation
- b. Power surge
- c. Loss of power

- .52 How does this system interface with the following:

- a. Facsimile recorder
- b. Radio receiver

235.6 SAFETY PRECAUTIONS

- .61 What general safety precautions (as described in MIMs, MRCs, etc.) apply to this system?

236 FREQUENCY SHIFT CONVERTER (CV-2979/UX) FRONT PANEL CONTROL SYSTEM

236

Reference:

- a. NAVSEA 0967-LP-433-6010, Figure 3-2

236.1 What is the function of this system?

- .11 Refer to a standard print of this system or to the actual equipment.

236.2 SYSTEM COMPONENTS AND COMPONENT PARTS

Discuss the designated items for the following components and component parts:

- A. What is its function?  
 B. Where is it located?  
 C. What are the safety/protective devices?  
 D. What protection is provided by it?  
 E. What are the probable indications if this component fails?  
 F. What are the positions and functions of each position?

- .21 Power switch  
 .22 Power indicator  
 .23 Frequency meter

| A | B | C | D | E | F |
|---|---|---|---|---|---|
| X | X | X | X | X | X |
| X | X |   |   |   |   |
| X | X |   |   |   |   |

236.3 PRINCIPLES OF OPERATION

- .31 How do the components work together to achieve the system's function?

236.4 PARAMETERS - None to be discussed.

236.5 SYSTEM INTERFACE

- .51 How do the following outside influences affect this system:

- a. Loss of power  
 b. Poorly tuned/mistuned radio facsimile signal  
 c. Power fluctuation  
 d. Power surge

236.6 SAFETY PRECAUTIONS

- .61 What general safety precautions (as described in MIMs, MRCs, etc.) apply to this system?

## References:

- a. NAVAIR 50-30SMQ1-501
- b. Manufacturer's Technical Manual

## 237.1 What is the function of this system?

- .11 Refer to a standard print of this system or to the actual equipment.

237.2 SYSTEM COMPONENTS AND COMPONENT PARTS

Discuss the designated items for the following components and component parts:

- A. What is its function?
- B. Where is it located?
- C. What are the safety/protective devices?
- D. What are the positions and functions of each position?

|   | A | B | C | D |
|---|---|---|---|---|
| .21 Frequency selector switch and scale | X | X |   | X |
| .22 Fuses                               | X | X | X |   |
| .23 Pilot light                         | X | X |   |   |
| .24 Power switch                        | X | X |   |   |
| .25 Power input indicator               | X | X |   |   |
| .26 Jacks                               | X | X |   |   |

237.3 PRINCIPLES OF OPERATION - None to be discussed.237.4 PARAMETERS - None to be discussed.237.5 SYSTEM INTERFACE

- .51 How do the following outside influences affect this system:

- a. Power fluctuation
- b. Power surge
- c. Loss of power

237.6 SAFETY PRECAUTIONS

- .61 What general safety precautions (as described in MIMs, MRCs, etc.) apply to this system?

238 INTEGRATED REFRACTIVE EFFECTS PREDICTION SUPPORT (IREPS)  
SYSTEM

238

Reference:

- a. Naval Ocean Systems Command T-D-236

238.1 What is the function of this system?

- .11 Refer to a standard print of this system or to the actual equipment.

238.2 SYSTEM COMPONENTS AND COMPONENT PARTS

Discuss the designated items for the following components and component parts:

- A. What is its function?  
B. Where is it located?  
C. What is the source of power?  
D. What are the modes of operation or control?  
E. What are the safety/protective devices?  
F. What protection is provided by it?  
G. What are the probable indications if this component fails?  
H. What are the positions and functions of each position?

- .21 HP9845A computer unit  
.22 Magnetic tapes  
.23 Sounding unit

| A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|
| X | X | X | X | X | X |   | X |
| X | X |   |   |   | X | X |   |
| X | X |   |   |   |   |   |   |

238.3 PRINCIPLES OF OPERATION

- .31 How do the components work together to achieve the system's function?  
.32 What is the sequence of component involvement to accomplish refractive effects forecast?  
.33 What indications will you receive if the system is malfunctioning?

238.4 PARAMETERS - None to be discussed.

238.5 SYSTEM INTERFACE

- .51 How do the following outside influences affect this system:

- a. Power fluctuation  
b. Power surge  
c. Loss of power

238.6 SAFETY PRECAUTIONS

- .61 What general safety precautions (as described in MIMs, MRCs, etc.) apply to this system?

Reference:

- a. Manufacturer's Technical Manual

239.1 What is the function of this system?

- .11 Refer to a standard print of this system or to the actual equipment.

239.2 SYSTEM COMPONENTS AND COMPONENT PARTS

Discuss the designated items for the following components and component parts:

- A. What is its function?
- B. Where is it located?
- C. What are the positions and functions of each position?

.21 Recorder head assembly

- a. On/off switch
- b. Manual paper advance
- c. Manual frame
- d. No paper light
- e. Power take up (optional)

.22 Electronic assembly (external)

- a. Manual start
- b. Manual stop
- c. Fast feed
- d. Signal source
- e. Background
- f. Mode
- g. Satellite
- h. Format

.23 Electronic assembly (internal)

- a. Gamma
- b. FSK tone control
- c. Receiver tuning aid
- d. Tape clock
- e. Manual speed
- f. Timer
- g. Start tone
- h. Automatic gain control (AGC)
- i. Input
- j. Signal monitor
- k. Manual feed
- l. Speed display

239.3 PRINCIPLES OF OPERATION - None to be discussed.

239.4 PARAMETERS - None to be discussed.



239.5 SYSTEM INTERFACE

.51 How do the following outside influences affect this system:

- a. Poor signal reception
- b. Loss of power
- c. Loss of signal
- d. Power fluctuation
- e. Power surge

239.6 SAFETY PRECAUTIONS

.61 What general safety precautions (as described in MIMs, MRCs, etc.) apply to this system?



FINAL QUALIFICATION AS  
CHART PLOTTER

NAME \_\_\_\_\_ RATE/RANK \_\_\_\_\_

This page is to be used as a record of satisfactory completion of designated sections of the Personnel Qualification Standard (PQS). Only specified supervisors may signify completion of applicable sections either by written or oral examination, or by observation of performance. The examination or checkout need not cover every item; however, a sufficient number should be covered to demonstrate the examinee's knowledge. Should supervisors "give away" their signatures, unnecessary difficulties can be expected in future routine operations.

This qualification section is to be maintained by the trainee and updated to ensure awareness of remaining tasks.

-----

QUALIFICATION

Having observed satisfactory performance, it is recommended the trainee be designated a qualified CHART PLOTTER (301).

RECOMMENDED \_\_\_\_\_ DATE \_\_\_\_\_  
(Supervisor)RECOMMENDED \_\_\_\_\_ DATE \_\_\_\_\_  
(Division Officer)RECOMMENDED \_\_\_\_\_ DATE \_\_\_\_\_  
(Department Head)QUALIFIED \_\_\_\_\_ DATE \_\_\_\_\_  
(Commanding Officer)SERVICE RECORD ENTRY \_\_\_\_\_ DATE \_\_\_\_\_  
(Personnel Officer)

CHART PLOTTER  
QUALIFICATION SUMMARY

PQS INDOCTRINATION

COMPLETED

(Training Officer/Date)

FINAL QUALIFICATION AS  
SURFACE WEATHER OBSERVER

NAME \_\_\_\_\_ RATE/RANK \_\_\_\_\_

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This qualification section is to be maintained by the trainee and updated to ensure awareness of remaining tasks.

QUALIFICATION

Having observed satisfactory performance, it is recommended the trainee be designated a qualified SURFACE WEATHER OBSERVER (302).

RECOMMENDED \_\_\_\_\_ DATE \_\_\_\_\_  
(Supervisor)

RECOMMENDED \_\_\_\_\_ DATE \_\_\_\_\_  
(Division Officer)

RECOMMENDED \_\_\_\_\_ DATE \_\_\_\_\_  
(Department Head)

QUALIFIED \_\_\_\_\_ DATE \_\_\_\_\_  
(Commanding Officer)

SERVICE RECORD ENTRY \_\_\_\_\_ DATE \_\_\_\_\_  
(Personnel Officer)

SURFACE WEATHER OBSERVER

QUALIFICATION SUMMARY

PQS INDOCTRINATION

COMPLETED \_\_\_\_\_  
(Training Officer/Date)

FINAL QUALIFICATION AS  
ENVIRONMENTAL COMMUNICATIONS OPERATOR

NAME \_\_\_\_\_ RATE/RANK \_\_\_\_\_

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This qualification section is to be maintained by the trainee and updated to ensure awareness of remaining tasks.

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QUALIFICATION

Having observed satisfactory performance, it is recommended the trainee be designated a qualified ENVIRONMENTAL COMMUNICATIONS OPERATOR (303).

RECOMMENDED \_\_\_\_\_ DATE \_\_\_\_\_  
(Supervisor)

RECOMMENDED \_\_\_\_\_ DATE \_\_\_\_\_  
(Division Officer)

RECOMMENDED \_\_\_\_\_ DATE \_\_\_\_\_  
(Department Head)

QUALIFIED \_\_\_\_\_ DATE \_\_\_\_\_  
(Commanding Officer)

SERVICE RECORD ENTRY \_\_\_\_\_ DATE \_\_\_\_\_  
(Personnel Officer)

# ENVIRONMENTAL COMMUNICATIONS OPERATOR

## QUALIFICATION SUMMARY

### PQS INDOCTRINATION

COMPLETED

(Training Officer/Date)

This section is to be completed by the Training Officer (TO) after the candidate has successfully completed the PQS indoctrination. The TO should provide a brief summary of the candidate's performance during the indoctrination, including any areas of strength and areas for improvement. The TO should also provide a recommendation regarding the candidate's readiness for the next phase of the PQS process.

This qualification section is to be completed by the TO and signed by the TO and the candidate. The TO should provide a brief summary of the candidate's performance during the indoctrination, including any areas of strength and areas for improvement. The TO should also provide a recommendation regarding the candidate's readiness for the next phase of the PQS process.

Signature of Training Officer: \_\_\_\_\_  
Date: \_\_\_\_\_

Signature of Candidate: \_\_\_\_\_  
Date: \_\_\_\_\_

Signature of Evaluator: \_\_\_\_\_  
Date: \_\_\_\_\_

Signature of Supervisor: \_\_\_\_\_  
Date: \_\_\_\_\_

Signature of Commander: \_\_\_\_\_  
Date: \_\_\_\_\_

Signature of Chief of Base: \_\_\_\_\_  
Date: \_\_\_\_\_

Signature of Chief of Station: \_\_\_\_\_  
Date: \_\_\_\_\_

Signature of Chief of Squadron: \_\_\_\_\_  
Date: \_\_\_\_\_

Signature of Chief of Wing: \_\_\_\_\_  
Date: \_\_\_\_\_

Signature of Chief of Group: \_\_\_\_\_  
Date: \_\_\_\_\_

Signature of Chief of Squadron: \_\_\_\_\_  
Date: \_\_\_\_\_

Signature of Chief of Wing: \_\_\_\_\_  
Date: \_\_\_\_\_

Signature of Chief of Group: \_\_\_\_\_  
Date: \_\_\_\_\_

Signature of Chief of Squadron: \_\_\_\_\_  
Date: \_\_\_\_\_

Signature of Chief of Wing: \_\_\_\_\_  
Date: \_\_\_\_\_

Signature of Chief of Group: \_\_\_\_\_  
Date: \_\_\_\_\_





FINAL QUALIFICATION AS  
OCEANOGRAPHIC/ACOUSTIC TECHNICIAN

NAME \_\_\_\_\_ RATE/RANK \_\_\_\_\_

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This qualification section is to be maintained by the trainee and updated to ensure awareness of remaining tasks.

-----  
QUALIFICATION

Having observed satisfactory performance, it is recommended the trainee be designated a qualified OCEANOGRAPHIC/ACOUSTIC TECHNICIAN (305).

RECOMMENDED \_\_\_\_\_ DATE \_\_\_\_\_  
(Supervisor)

RECOMMENDED \_\_\_\_\_ DATE \_\_\_\_\_  
(Division Officer)

RECOMMENDED \_\_\_\_\_ DATE \_\_\_\_\_  
(Department Head)

QUALIFIED \_\_\_\_\_ DATE \_\_\_\_\_  
(Commanding Officer)

SERVICE RECORD ENTRY \_\_\_\_\_ DATE \_\_\_\_\_  
(Personnel Officer)

OCEANOGRAPHIC/ACOUSTIC TECHNICIAN

QUALIFICATION SUMMARY

PQS INDOCTRINATION

COMPLETED

(Training Officer/Date)

FINAL QUALIFICATION AS  
AN/SMQ-6(V) METEOROLOGICAL DATA RECEIVER-RECORDER SET OPERATOR

NAME \_\_\_\_\_ RATE/RANK \_\_\_\_\_

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This qualification section is to be maintained by the trainee and updated to ensure awareness of remaining tasks.

-----  
QUALIFICATION

Having observed satisfactory performance, it is recommended the trainee be designated a qualified AN/SMQ-6(V) METEOROLOGICAL DATA RECEIVER-RECORDER SET OPERATOR (306).

RECOMMENDED \_\_\_\_\_ DATE \_\_\_\_\_  
(Supervisor)

RECOMMENDED \_\_\_\_\_ DATE \_\_\_\_\_  
(Division Officer)

RECOMMENDED \_\_\_\_\_ DATE \_\_\_\_\_  
(Department Head)

QUALIFIED \_\_\_\_\_ DATE \_\_\_\_\_  
(Commanding Officer)

SERVICE RECORD ENTRY \_\_\_\_\_ DATE \_\_\_\_\_  
(Personnel Officer)

AN/SMQ-6(V) METEOROLOGICAL DATA RECEIVER-RECORDER SET OPERATOR

QUALIFICATION SUMMARY

PQS INDOCTRINATION

COMPLETED

\_\_\_\_\_  
(Training Officer/Date)

This qualification section is to be maintained by the trainee and updated to ensure awareness of remaining tasks.

Having observed satisfactory performance, it is recommended the trainee be designated a qualified AN/SMQ-10 METEOROLOGICAL DATA RECEIVER-RECORDER SET OPERATOR (307).

RECOMMENDED \_\_\_\_\_ DATE \_\_\_\_\_  
(Supervisor)

RECOMMENDED \_\_\_\_\_ DATE \_\_\_\_\_  
(Division Officer)

RECOMMENDED \_\_\_\_\_ DATE \_\_\_\_\_  
(Department Head)

QUALIFIED \_\_\_\_\_ DATE \_\_\_\_\_  
(Commanding Officer)

SERVICE RECORD ENTRY \_\_\_\_\_ DATE \_\_\_\_\_  
(Personnel Officer)

AN/SMQ-10 METEOROLOGICAL DATA RECEIVER-RECORDER SET OPERATOR

QUALIFICATION SUMMARY

PQS INDOCTRINATION

COMPLETED

(Training Officer/Date)

FINAL QUALIFICATION AS  
UPPER AIR OBSERVER

NAME \_\_\_\_\_ RATE/RANK \_\_\_\_\_

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This qualification section is to be maintained by the trainee and updated to ensure awareness of remaining tasks.

-----  
QUALIFICATION

Having observed satisfactory performance, it is recommended the trainee be designated a qualified UPPER AIR OBSERVER (308).

RECOMMENDED \_\_\_\_\_ DATE \_\_\_\_\_  
(Supervisor)

RECOMMENDED \_\_\_\_\_ DATE \_\_\_\_\_  
(Division Officer)

RECOMMENDED \_\_\_\_\_ DATE \_\_\_\_\_  
(Department Head)

QUALIFIED \_\_\_\_\_ DATE \_\_\_\_\_  
(Commanding Officer)

SERVICE RECORD ENTRY \_\_\_\_\_ DATE \_\_\_\_\_  
(Personnel Officer)



UPPER AIR OBSERVER  
QUALIFICATION SUMMARY

PQS INDOCTRINATION

COMPLETED \_\_\_\_\_  
(Training Officer/Date)

FINAL QUALIFICATION AS  
WEATHER OFFICE ADMINISTRATION/SUPPLY PETTY OFFICER

NAME \_\_\_\_\_ RATE/RANK \_\_\_\_\_

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This qualification section is to be maintained by the trainee and updated to ensure awareness of remaining tasks.

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QUALIFICATION

Having observed satisfactory performance, it is recommended the trainee be designated a qualified WEATHER OFFICE ADMINISTRATION/SUPPLY PETTY OFFICER (309).

RECOMMENDED \_\_\_\_\_ DATE \_\_\_\_\_  
(Supervisor)

RECOMMENDED \_\_\_\_\_ DATE \_\_\_\_\_  
(Division Officer)

RECOMMENDED \_\_\_\_\_ DATE \_\_\_\_\_  
(Department Head)

QUALIFIED \_\_\_\_\_ DATE \_\_\_\_\_  
(Commanding Officer)

SERVICE RECORD ENTRY \_\_\_\_\_ DATE \_\_\_\_\_  
(Personnel Officer)

WEATHER OFFICE ADMINISTRATION/SUPPLY PETTY OFFICER

QUALIFICATION SUMMARY

PQS INDOCTRINATION

COMPLETED

(Training Officer/Date)

Before starting your assigned tasks, complete the following items:

Fundamentals: 103 and 113 (25% of watchstation)

System: 203 (25% of watchstation)

### 301.1 TASKS

For the tasks listed below:

- A. What are the steps of this procedure?
- B. What are the reasons for each step?
- C. What parameters must be monitored?
- D. Perform this task IAW NAVOCEANCOMINST 3140.1.

#### .11 Label chart/trace history (3 times)

\_\_\_\_\_  
(Signature) (Date) (Pt) 1

\_\_\_\_\_  
(Signature) (Date) (Pt) 1

\_\_\_\_\_  
(Signature) (Date) (Pt) 1

#### .12 Determine locations of reporting stations (3 times)

\_\_\_\_\_  
(Signature) (Date) (Pt) 1

\_\_\_\_\_  
(Signature) (Date) (Pt) 1

\_\_\_\_\_  
(Signature) (Date) (Pt) 1

#### .13 Plot synoptic code (land, ship, buoy) (3 times)

\_\_\_\_\_  
(Signature) (Date) (Pt) 1

\_\_\_\_\_  
(Signature) (Date) (Pt) 1

\_\_\_\_\_  
(Signature) (Date) (Pt) 1

#### .14 Plot airways code (3 times)

\_\_\_\_\_  
(Signature) (Date) (Pt) 1

\_\_\_\_\_  
(Signature) (Date) (Pt) 1

301.1 TASKS (CONT'D)

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

.15 Plot METAR code (3 times)

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

.16 Plot and analyze skew-T, log-P diagram (3 times)

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

.17 Plot constant-pressure chart (3 times)

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

.18 Plot winds aloft chart (3 times)

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

.19 Plot reconnaissance reporting code (RECCO) (3 times)

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

301.1 TASKS (CONT'D)

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

.110 Plot radiological fallout (RADFO) diagram (3 times)

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

Completion of .1 area comprises 30% of watchstation.

301.2 INFREQUENT TASKS - None to be discussed.

301.3 ABNORMAL CONDITIONS

For the abnormal conditions listed below:

- A. What indications and alarms are received?
- B. What are the probable causes?
- C. Perform or simulate the corrective/immediate action for this abnormal condition IAW NAVOCEANCOMINST 3140.1.

.31 Transposed letters case to numbers case

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

Completion of .3 area comprises 10% of watchstation.

301.4 EMERGENCIES - None to be discussed.

301.5 WATCHES

Stand 4 satisfactory watches under qualified supervision.

| SIGNATURE | DATE  | PTS |
|-----------|-------|-----|
| _____     | _____ | 1   |
| _____     | _____ | 1   |
| _____     | _____ | 1   |
| _____     | _____ | 1   |

Completion of .5 area comprises 10% of watchstation.

Total Points This Watchstation Including  
Required Fundamentals and System Sections:

38

Before starting your assigned tasks, complete the following items:

Fundamentals: 104, 105, and 113 (25% of watchstation)

Systems: 203 thru 207 (25% of watchstation)

### 302.1 TASKS

For the tasks listed below:

- A. What are the steps of this procedure?
- B. What are the reasons for each step?
- C. What safety precautions must be observed?
- D. What parameters must be monitored?
- E. Perform this task IAW NAVOCEANCOMINST 3140.1 and 3144.1.

- .11 Take and log weather observations (RS, SA, SP, L)  
(10 times)

| A | B | C | D | E |
|---|---|---|---|---|
| X | X | X | X | X |

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>





302.1 TASKS (CONT'D)

.12 Encode weather observation (10 times)

| A | B | C | D | E |
|---|---|---|---|---|
| X |   |   |   | X |

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

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(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

.13 Verify and transmit weather observation (3 times)

|   |   |  |   |   |
|---|---|--|---|---|
| X | X |  | X | X |
|---|---|--|---|---|

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

.14 Post weather charts and messages (3 times)

|   |  |  |  |   |
|---|--|--|--|---|
| X |  |  |  | X |
|---|--|--|--|---|

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

### 302.1 TASKS (CONT'D)

.15 Type and disseminate forecast (3 times)

| A | B | C | D | E |
|---|---|---|---|---|
| X |   |   | X | X |

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

.16 Change chart and re-ink on marine barograph (3 times)

X X X X X

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

.17 Replace consumables

X X

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

Completion of .1 area comprises 10% of watchstation.

### 302.2 INFREQUENT TASKS

For the infrequent tasks listed below:

- What are the steps of this procedure?
- What are the reasons for each step?
- What control/coordination is required?
- What communications must be established?
- What safety precautions must be observed?
- What parameters must be monitored?
- What conditions require this infrequent task?
- Perform or simulate this task IAW NAVOCEANCOMINST 3140.1 and 3144.1.

.21 Post observer aloft

| A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|
| X | X |   | X | X | X | X | X |

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

.22 Use the ceiling light

X X X X X X X

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

## 302.2 INFREQUENT TASKS (CONT'D)

| A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|
| X | X | X |   | X | X | X | X |

.23 Use the ceiling balloon

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

Completion of .2 area comprises 10% of watchstation.

## 302.3 ABNORMAL CONDITIONS

For the abnormal conditions listed below:

- A. What indications and alarms are received?
- B. What immediate action is required?
- C. What operating limitations are imposed?
- D. What emergencies or malfunctions may occur if immediate action is not taken?
- E. How does this condition affect other operations/equipment/watchstations?
- F. Perform or simulate the corrective/immediate action for this abnormal condition IAW NAVOCEANCOMINST 3140.1 and 3144.1.

.31 Hurricane/typhoon

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

.32 High winds

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

.33 High seas

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

Completion of .3 area comprises 10% of watchstation.

## 302.4 EMERGENCIES

For the emergency conditions listed below:

- A. What indications and alarms are received?
- B. What immediate action is required?
- C. What operating limitations are imposed?
- D. How does this emergency affect other operations/equipment/watchstations?
- E. Perform or simulate the immediate action for this emergency condition IAW NAVOCEANCOMINST 3140.1 and 3144.1.

.41 Aircraft emergency/mishap

| A | B | C | D | E |
|---|---|---|---|---|
| X | X |   | X | X |

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

302.4 EMERGENCIES (CONT'D)

.42 General quarters (GQ)

A B C D E  
X X X X X

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

.43 Man overboard

X X X X

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

Completion of .4 area comprises 10% of watchstation.

302.5 WATCHES

Stand 4 satisfactory watches under qualified supervision.

| <u>SIGNATURE</u> | <u>DATE</u> | <u>PTS</u> |
|------------------|-------------|------------|
| _____            | _____       | <u>1</u>   |
| _____            | _____       | <u>1</u>   |
| _____            | _____       | <u>1</u>   |
| _____            | _____       | <u>1</u>   |

Completion of .5 area comprises 10% of watchstation.

Total Points This Watchstation Including  
Required Fundamentals and Systems Sections:

54

Before starting your assigned tasks, complete the following items:

Fundamentals: 102 and 113 (25% of watchstation)

Systems: 202, 208 thru 212, 227, 235, 236 and 239  
(25% of watchstation)

### 303.1 TASKS

For the tasks listed below:

- A. What are the steps of this procedure?
- B. What are the reasons for each step?
- C. What safety precautions must be observed?
- D. What parameters must be monitored?
- E. Perform this task IAW NAVOCEANCOMINST 2304.1.

- .11 Tune and adjust communications equipment to obtain teletype data, facsimile data, and time check (3 times)

A B C D E

X X X X X

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

- .12 Operate loop teletype (3 times)

X X X X X

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

- .13 Operate character generator (CG) (3 times)

X X X X X

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

### 303.1 TASKS (CONT'D)

.14 Operate MC unit

| A | B | C | D | E |
|---|---|---|---|---|
| X | X |   | X | X |

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

.15 Operate pneumatic tube

|   |   |   |   |   |
|---|---|---|---|---|
| X | X | X | X | X |
|---|---|---|---|---|

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

Completion of .1 area comprises 20% of watchstation.

### 303.2 INFREQUENT TASKS - None to be discussed.

### 303.3 ABNORMAL CONDITIONS

For the abnormal conditions listed below:

- What indications and alarms are received?
- What immediate action is required?
- What are the probable causes?
- What operating limitations are imposed?
- What emergencies or malfunctions may occur if immediate action is not taken?
- How does this condition affect other operations/equipment/watchstations?
- What followup action is required?
- Perform or simulate the corrective/immediate action for this abnormal condition IAW NAVOCEANCOMINST 2304.1.

.31 Changes in environmental condition or radio reception

| A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|
| X | X |   | X |   | X |   | X |

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

.32 Loss of power

|   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|
| X | X | X | X | X | X | X | X |
|---|---|---|---|---|---|---|---|

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

.33 Loss of signal

|   |   |   |   |  |   |  |   |
|---|---|---|---|--|---|--|---|
| X | X | X | X |  | X |  | X |
|---|---|---|---|--|---|--|---|

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

.34 Garbled covered broadcast

|   |   |   |   |  |   |   |   |
|---|---|---|---|--|---|---|---|
| X | X | X | X |  | X | X | X |
|---|---|---|---|--|---|---|---|

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

Completion of .3 area comprises 20% of watchstation.

### 303.4 EMERGENCIES - None to be discussed.

303.5 WATCHES

Stand 4 satisfactory watches under qualified supervision.

| SIGNATURE | DATE | PTS |
|-----------|------|-----|
|           |      | 1   |
|           |      | 1   |
|           |      | 1   |
|           |      | 1   |

Completion of .5 area comprises 10% of watchstation.

Total Points This Watchstation Including  
Required Fundamentals and Systems Sections:

31

Before starting your assigned tasks, complete the following items:

Fundamentals: 101 and 113 (25% of watchstation)

Systems: 201 and 203 (25% of watchstation)

## 304.1 TASKS

For the tasks listed below:

- A. What are the steps of this procedure?
- B. What are the reasons for each step?
- C. What control/coordination is required?
- D. What communications must be established?
- E. What safety precautions must be observed?
- F. What parameters must be monitored?
- G. Perform this task IAW NAVOCEANCOMINST 3140.1.

.11 Load the XBT launcher

| A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|
| X | X | X | X | X | X | X |

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

.12 Check and calibrate recorder (2 times)

|   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|
| X | X | X | X | X | X | X |
|---|---|---|---|---|---|---|

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

.13 Take a BT launch

|   |   |   |   |  |   |   |
|---|---|---|---|--|---|---|
| X | X | X | X |  | X | X |
|---|---|---|---|--|---|---|

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

.14 Analyze BT trace and transfer data to BT log worksheet (4 times)

|   |   |  |  |   |   |  |
|---|---|--|--|---|---|--|
| X | X |  |  | X | X |  |
|---|---|--|--|---|---|--|

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

.15 Draft and transmit BT data (4 times)

|   |   |  |  |   |   |  |
|---|---|--|--|---|---|--|
| X | X |  |  | X | X |  |
|---|---|--|--|---|---|--|

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>



304.1 TASKS (CONT'D)

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

Completion of .1 area comprises 30% of watchstation.

304.2 INFREQUENT TASKS - None to be discussed.

304.3 ABNORMAL CONDITIONS

For the abnormal conditions listed below:

- A. What indications and alarms are received?
- B. What followup action is required?
- C. Perform or simulate the corrective/immediate action for this abnormal condition IAW NAVOCEANCOMINST 3140.1.

.31 Excessive storage time for probe

A B C  
X X X

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

.32 Bad probe

X X X

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

Completion of .3 area comprises 10% of watchstation.

304.4 EMERGENCIES - None to be discussed.

304.5 WATCHES

Stand 4 satisfactory watches under qualified supervision.

| SIGNATURE | DATE  | PTS |
|-----------|-------|-----|
| _____     | _____ | 1   |
| _____     | _____ | 1   |
| _____     | _____ | 1   |
| _____     | _____ | 1   |

Completion of .5 area comprises 10% of watchstation.

Total Points This Watchstation Including  
Required Fundamentals and Systems Sections:

22

Before starting your assigned tasks, complete the following items:

Fundamentals: 104, 109 and 113 (35% of watchstation)

### 305.1 TASKS

For the tasks listed below:

- A. What are the steps of this procedure?
- B. What are the reasons for each step?
- C. What control/coordination is required?
- D. What safety precautions must be observed?
- E. Perform this task IAW NAVOCEANCOMINST 3140.1.

- .11 Work up ACTIVE acoustic sensor range prediction (ASRAP) worksheet from BT trace/message (3 times)

A B C D E

X X X X

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

- .12 Prepare SHARPS worksheet from message (3 times)

X X X X

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

- .13 Prepare propagation loss (PROPLOSS) curves from PHITAR or passive ASRAP message (4 times)

X X X X

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

### 305.1 TASKS (CONT'D)

.14 Interpret ASRAP message (3 times)

| A | B | C | D | E |
|---|---|---|---|---|
| X | X | X | X | X |

| (Signature) | (Date) | (Pt) |
|-------------|--------|------|
|             |        | 1    |

| (Signature) | (Date) | (Pt) |
|-------------|--------|------|
|             |        | 1    |

| (Signature) | (Date) | (Pt) |
|-------------|--------|------|
|             |        | 1    |

.15 Assemble/distribute antisubmarine warfare (ASW) packet (2 times)

|   |   |   |   |
|---|---|---|---|
| X | X | X | X |
|---|---|---|---|

| (Signature) | (Date) | (Pt) |
|-------------|--------|------|
|             |        | 1    |

| (Signature) | (Date) | (Pt) |
|-------------|--------|------|
|             |        | 1    |

.16 Enter BT data into ICAPs (2 times)

|   |   |   |   |   |
|---|---|---|---|---|
| X | X | X | X | X |
|---|---|---|---|---|

| (Signature) | (Date) | (Pt) |
|-------------|--------|------|
|             |        | 1    |

| (Signature) | (Date) | (Pt) |
|-------------|--------|------|
|             |        | 1    |

.17 Pick up ICAP output and distribute to/brief user

|   |   |   |   |
|---|---|---|---|
| X | X | X | X |
|---|---|---|---|

| (Signature) | (Date) | (Pt) |
|-------------|--------|------|
|             |        | 1    |

Completion of .1 area comprises 55% of watchstation.

305.2 INFREQUENT TASKS - None to be discussed.

305.3 ABNORMAL CONDITIONS - None to be discussed.

305.4 EMERGENCIES - None to be discussed.

305.5 WATCHES

Stand 4 satisfactory watches under qualified supervision.

| SIGNATURE | DATE | PTS |
|-----------|------|-----|
|           |      | 1   |
|           |      | 1   |
|           |      | 1   |
|           |      | 1   |

305.5 WATCHES (CONT'D)

Completion of .5 area comprises 10% of watchstation.

Total Points This Watchstation Including  
Required Fundamentals Section:

25

Before starting your assigned tasks, complete the following items:

Fundamentals: 107 and 113 (25% of watchstation)

Systems: 220 thru 225 (25% of watchstation)

### 306.1 TASKS

For the tasks listed below:

- A. What are the steps of this procedure?
- B. What are the reasons for each step?
- C. What safety precautions must be observed?
- D. What parameters must be monitored?
- E. Perform this task IAW NAVOCEANCOMINST 3140.1.

- .11 Prepare worksheet, using the plotting board, tracking diagram, and message format (4 times)

A B C D E

X X X X

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

- .12 Prepare console for interception (4 times)

X X X X X

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

- .13 Tape, track and receive satellite signal to obtain picture product (4 times)

X X X X X

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

### 306.1 TASKS (CONT'D)

A B C D E

\_\_\_\_\_  
(Signature) (Date) (Pt) 1

\_\_\_\_\_  
(Signature) (Date) (Pt) 1

- .14 Prepare console for tape playback and obtain picture product (4 times)

X X X X X

\_\_\_\_\_  
(Signature) (Date) (Pt) 1

\_\_\_\_\_  
(Signature) (Date) (Pt) 1

\_\_\_\_\_  
(Signature) (Date) (Pt) 1

\_\_\_\_\_  
(Signature) (Date) (Pt) 1

- .15 Manual gridding of satellite picture (R0-402/Alden 9519) (4 times)

X X X X X

\_\_\_\_\_  
(Signature) (Date) (Pt) 1

\_\_\_\_\_  
(Signature) (Date) (Pt) 1

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(Signature) (Date) (Pt) 1

Completion of .1 area comprises 20% of watchstation.

### 306.2 INFREQUENT TASKS

For the infrequent tasks listed below:

- A. What are the steps of this procedure?
- B. What are the reasons for each step?
- C. What safety precautions must be observed?
- D. What parameters must be monitored?
- E. What conditions require this infrequent task?
- F. Perform or simulate this task IAW NAVOCEANCOMINST 3140.1.

- .21 Replace photo paper in recorder

\_\_\_\_\_  
(Signature) (Date) (Pt) 1

306.2 INFREQUENT TASKS (CONT'D)

.22 Correct for loss of signal

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

.23 Correct for improper print/white levels

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

Completion of .2 area comprises 20% of watchstation.

306.3 ABNORMAL CONDITIONS - None to be discussed.

306.4 EMERGENCIES - None to be discussed.

306.5 WATCHES

Stand 4 satisfactory watches under qualified supervision.

| <u>SIGNATURE</u> | <u>DATE</u> | <u>PTS</u> |
|------------------|-------------|------------|
| _____            | _____       | 1          |
| _____            | _____       | 1          |
| _____            | _____       | 1          |
| _____            | _____       | 1          |

Completion of .5 area comprises 10% of watchstation.

Total Points This Watchstation Including  
Required Fundamentals and Systems Sections:

35





307 WATCHSTATION - AN/SMQ-10 METEOROLOGICAL DATA RECEIVER-RECORDER 307  
SET OPERATOR

Before starting your assigned tasks, complete the following items:

Fundamentals: 107, 108 and 113 (25% of watchstation)

Systems: 226 thru 234 (25% of watchstation)

307.1 TASKS

For the tasks listed below:

- A. What are the steps of this procedure?
- B. What are the reasons for each step?
- C. What safety precautions must be observed?
- D. Perform this task IAW NAVOCEANCOMINST C3160.4.

.11 Energize equipment

A B C D  
X X X X

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

.12 Clear camera jam

X X X

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

.13 Display mount, deck, and space coordinates

X X X

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

.14 Interpret direct message data mode (DMDM) data

X X X

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

.15 Coordinate with Duty Forecaster for desired data

X X X

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

.16 Change chemical and clean processor cells

X X X X

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

.17 Set up patch panel for encrypted and clear data

X X X

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

.18 Clear processor jam

X X X X

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

# 307.1 TASKS (CONT'D)

.19 Initiate X2 visual playback

| A | B | C | D |
|---|---|---|---|
| X | X |   | X |

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

.110 Initiate a negative

|   |   |  |   |
|---|---|--|---|
| X | X |  | X |
|---|---|--|---|

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

.111 Obtain data signal on oscilloscope

|   |   |  |   |
|---|---|--|---|
| X | X |  | X |
|---|---|--|---|

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

.112 Slew antenna to a given coordinate

|   |   |   |   |
|---|---|---|---|
| X | X | X | X |
|---|---|---|---|

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

.113 Initiate X4 infrared playback

|   |   |  |   |
|---|---|--|---|
| X | X |  | X |
|---|---|--|---|

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

.114 Set tape search unit and antenna control clocks with WWV

|   |   |  |   |
|---|---|--|---|
| X | X |  | X |
|---|---|--|---|

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

.115 Initiate computer run

|   |   |  |   |
|---|---|--|---|
| X | X |  | X |
|---|---|--|---|

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

.116 Run predictions

|   |   |  |   |
|---|---|--|---|
| X | X |  | X |
|---|---|--|---|

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

.117 Update satellite parameters

|   |   |  |   |
|---|---|--|---|
| X | X |  | X |
|---|---|--|---|

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

.118 Top off chemicals

|   |   |  |   |
|---|---|--|---|
| X | X |  | X |
|---|---|--|---|

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

.119 Conduct pre-mission setup for real time

|   |   |  |   |
|---|---|--|---|
| X | X |  | X |
|---|---|--|---|

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

# 307.1 TASKS (CONT'D)

.120 Set up for playback

| A | B | C | D |
|---|---|---|---|
| X | X | X | X |

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

.121 Program computer

|   |   |   |
|---|---|---|
| X | X | X |
|---|---|---|

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

.122 Initiate camera clear

|   |   |   |
|---|---|---|
| X | X | X |
|---|---|---|

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

.123 Prepare magnetic tape recorder for record

|   |   |   |
|---|---|---|
| X | X | X |
|---|---|---|

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

.124 Degauss magnetic tape

|   |   |   |
|---|---|---|
| X | X | X |
|---|---|---|

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

.125 Grid picture

|   |   |   |
|---|---|---|
| X | X | X |
|---|---|---|

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

.126 Set up data processing system (DPS) for special modification table

|   |   |   |
|---|---|---|
| X | X | X |
|---|---|---|

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

.127 Reverse receivers

|   |   |   |
|---|---|---|
| X | X | X |
|---|---|---|

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

.128 Operate magnetic tape from tape search unit

|   |   |   |
|---|---|---|
| X | X | X |
|---|---|---|

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

.129 Clear computer memory

|   |   |   |
|---|---|---|
| X | X | X |
|---|---|---|

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

.130 Operate antenna in all modes

|   |   |   |
|---|---|---|
| X | X | X |
|---|---|---|

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

307.1 TASKS (CONT'D)

| A | B | C | D |
|---|---|---|---|
| X | X |   | X |

.131 Update system constants

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

Completion of .1 area comprises 25% of watchstation.

307.2 INFREQUENT TASKS - None to be discussed.

307.3 ABNORMAL CONDITIONS

For the abnormal conditions listed below:

- A. What indications and alarms are received?
- B. What immediate action is required?
- C. What are the probable causes?
- D. What operating limitations are imposed?
- E. What emergencies or malfunctions may occur if immediate action is not taken?
- F. How does this condition affect other operations/equipment/watchstations?
- G. Perform or simulate the corrective/immediate action for this abnormal condition IAW NAVOCEANCOMINST C3160.4.

| A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|
| X | X | X | X | X | X | X |

.31 Improper real-time setup

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

.32 Satellite malfunction

|   |  |   |   |   |   |   |
|---|--|---|---|---|---|---|
| X |  | X | X | X | X | X |
|---|--|---|---|---|---|---|

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

.33 No signal locked on receiver

|   |   |   |   |  |  |   |
|---|---|---|---|--|--|---|
| X | X | X | X |  |  | X |
|---|---|---|---|--|--|---|

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

.34 No lock-on decommunicator but signal locked on receiver

|   |   |   |   |  |  |   |
|---|---|---|---|--|--|---|
| X | X | X | X |  |  | X |
|---|---|---|---|--|--|---|

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

.35 Signal locked on decommunicator but no signal on oscilloscope

|   |   |   |   |  |  |   |
|---|---|---|---|--|--|---|
| X | X | X | X |  |  | X |
|---|---|---|---|--|--|---|

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

.36 No film exit

|   |   |   |   |  |  |   |
|---|---|---|---|--|--|---|
| X | X | X | X |  |  | X |
|---|---|---|---|--|--|---|

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

307.3 ABNORMAL CONDITIONS (CONT'D)

.37 No data on film

| A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|
| X |   | X | X |   | X | X |

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

.38 Computer has PE program halts

|   |   |   |   |  |   |   |
|---|---|---|---|--|---|---|
| X | X | X | X |  | X | X |
|---|---|---|---|--|---|---|

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

Completion of .3 area comprises 15% of watchstation.

307.4 EMERGENCIES - None to be discussed.

307.5 WATCHES

Stand 4 satisfactory watches under qualified supervision.

| SIGNATURE | DATE  | PTS |
|-----------|-------|-----|
| _____     | _____ | 1   |
| _____     | _____ | 1   |
| _____     | _____ | 1   |
| _____     | _____ | 1   |

Completion of .5 area comprises 10% of watchstation.

Total Points This Watchstation Including  
Required Fundamentals and Systems Sections:

55



Before starting your assigned tasks, complete the following items:

Fundamentals: 104, 106 and 113 (25% of watchstation)

Systems: 203, 213 thru 219, 237 and 238 (25% of watchstation)

### 308.1 TASKS

For the tasks listed below:

- A. What are the steps of this procedure?
- B. What are the reasons for each step?
- C. What control/coordination is required?
- D. What communications must be established?
- E. What safety precautions must be observed?
- F. What parameters must be monitored?
- G. Perform this task IAW NAVOCEANCOMINST 3140.1.

.11 Prepare humidity chamber (2 times)

| A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|
| X | X | X |   | X | X | X |

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

.12 Prepare ground equipment (2 times)

|   |   |   |  |   |   |   |
|---|---|---|--|---|---|---|
| X | X | X |  | X | X | X |
|---|---|---|--|---|---|---|

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

.13 Prepare adiabatic charts

|   |   |  |  |  |  |   |
|---|---|--|--|--|--|---|
| X | X |  |  |  |  | X |
|---|---|--|--|--|--|---|

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

.14 Prepare radiosonde for baseline check test (3 times)

|   |   |  |  |   |   |   |
|---|---|--|--|---|---|---|
| X | X |  |  | X | X | X |
|---|---|--|--|---|---|---|

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

.15 Conduct pre-baseline check test (2 times)

|   |   |  |  |   |   |   |
|---|---|--|--|---|---|---|
| X | X |  |  | X | X | X |
|---|---|--|--|---|---|---|

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

308.1 TASKS (CONT'D)

A B C D E F G

- |      |  |                  |
|------|--|------------------|
|      | (Signature) _____ (Date) _____ (Pt) <sup>1</sup> |                  |
| .16  | Inspect balloon and inflate                      | X X X    X X X   |
|      | (Signature) _____ (Date) _____ (Pt) <sup>1</sup> |                  |
| .17  | Conduct baseline check (3 times)                 | X X X    X X X   |
|      | (Signature) _____ (Date) _____ (Pt) <sup>1</sup> |                  |
|      | (Signature) _____ (Date) _____ (Pt) <sup>1</sup> |                  |
|      | (Signature) _____ (Date) _____ (Pt) <sup>1</sup> |                  |
| .18  | Compute baseline data (3 times)                  | X X        X X X |
|      | (Signature) _____ (Date) _____ (Pt) <sup>1</sup> |                  |
|      | (Signature) _____ (Date) _____ (Pt) <sup>1</sup> |                  |
|      | (Signature) _____ (Date) _____ (Pt) <sup>1</sup> |                  |
| .19  | Set temperature and humidity evaluator (3 times) | X X        X X   |
|      | (Signature) _____ (Date) _____ (Pt) <sup>1</sup> |                  |
|      | (Signature) _____ (Date) _____ (Pt) <sup>1</sup> |                  |
|      | (Signature) _____ (Date) _____ (Pt) <sup>1</sup> |                  |
| .110 | Take surface observation                         | X X    X X X X   |
|      | (Signature) _____ (Date) _____ (Pt) <sup>1</sup> |                  |
| .111 | Set release point pressure contact (3 times)     | X X        X X X |
|      | (Signature) _____ (Date) _____ (Pt) <sup>1</sup> |                  |
|      | (Signature) _____ (Date) _____ (Pt) <sup>1</sup> |                  |



308.1 TASKS (CONT'D)

A B C D E F G

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

.112 Assemble balloon train

X X X X X X X

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

.113 Launch balloon

X X X X X X X

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

.114 Operate ground equipment (3 times)

X X X X X X X

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

.115 Evaluate recorder record (3 times)

X X      X X X

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

.116 Compute and evaluate adiabatic charts (3 times)

X X    X    X X

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

.117 Terminate sounding (3 times)

X X      X X X

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

### 308.1 TASKS (CONT'D)

.118 Secure ground equipment (3 times)

| A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|
| X | X |   |   | X | X | X |

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

.119 Conduct quality control procedures (3 times)

|   |   |  |  |  |   |   |
|---|---|--|--|--|---|---|
| X | X |  |  |  | X | X |
|---|---|--|--|--|---|---|

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

.120 Encode and transmit data (3 times)

|   |   |  |  |  |   |   |
|---|---|--|--|--|---|---|
| X | X |  |  |  | X | X |
|---|---|--|--|--|---|---|

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

.121 Compute IREPS (2 times)

|   |   |  |  |   |   |   |
|---|---|--|--|---|---|---|
| X | X |  |  | X | X | X |
|---|---|--|--|---|---|---|

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

.122 Plot and analyze Skew-T (2 times)

|   |   |  |  |  |   |   |
|---|---|--|--|--|---|---|
| X | X |  |  |  | X | X |
|---|---|--|--|--|---|---|

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

\_\_\_\_\_  
(Signature) (Date) (Pt) <sup>1</sup>

Completion of .1 area comprises 30% of watchstation.

## 308.2 INFREQUENT TASKS

For the infrequent tasks listed below:

- A. What are the steps of this procedure?
- B. What are the reasons for each step?
- C. What control/coordination is required?
- D. What safety precautions must be observed?
- E. What parameters must be monitored?
- F. How are monitored parameters changed by this infrequent task?
- G. What conditions require this infrequent task?
- H. Perform or simulate this task IAW NAVOCEANCOMINST 3140.1.

|   | A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|---|
| .21 Calibrate ground equipment IAW 3-M system                 | X | X | X | X | X | X | X | X |
| (Signature) _____ (Date) _____ (Pt) <sup>1</sup>              |   |   |   |   |   |   |   |   |
| .22 Conduct manual baseline                                   | X | X |   | X | X |   | X | X |
| (Signature) _____ (Date) _____ (Pt) <sup>1</sup>              |   |   |   |   |   |   |   |   |
| .23 Compute height when surface pressure is less than 1000-mb | X | X |   |   | X |   | X | X |
| (Signature) _____ (Date) _____ (Pt) <sup>1</sup>              |   |   |   |   |   |   |   |   |
| .24 Compute ballistic winds from raw data                     | X | X |   |   | X |   | X | X |
| (Signature) _____ (Date) _____ (Pt) <sup>1</sup>              |   |   |   |   |   |   |   |   |

Completion of .2 area comprises 10% of watchstation.

308.3 ABNORMAL CONDITIONS - None to be discussed.

308.4 EMERGENCIES - None to be discussed.

308.5 WATCHES

Stand 4 satisfactory watches under qualified supervision.

| SIGNATURE | DATE  | PTS |
|-----------|-------|-----|
| _____     | _____ | 1   |
| _____     | _____ | 1   |
| _____     | _____ | 1   |
| _____     | _____ | 1   |

Completion of .5 area comprises 10% of watchstation.

Total Points This Watchstation Including  
Required Fundamentals and Systems Sections:

72



Before starting your assigned ta

Fundamentals: 111 thru 113

### 309.1 TASKS

For the tasks listed below:

- A. What are the steps of this p
- B. What are the reasons for eac
- C. What control/coordination is
- D. What parameters must be moni
- E. Perform this task IAW NAVOCE

- .11 Inventory and order meteorologic  
supplies (2 times)

\_\_\_\_\_  
(Signature) (Date)

\_\_\_\_\_  
(Signature) (Date) (Pt)

- .12 File weather forms and messages (2 times)

X X X X

\_\_\_\_\_  
(Signature) (Date) (Pt)

\_\_\_\_\_  
(Signature) (Date) (Pt)

- .13 Maintain climatological records and publications  
(2 times)

X X X X X

\_\_\_\_\_  
(Signature) (Date) (Pt)

\_\_\_\_\_  
(Signature) (Date) (Pt)

- .14 Maintain technical library

X X X X

\_\_\_\_\_  
(Signature) (Date) (Pt)

- .15 Type weather office correspondence (5 times)

X X X X X

\_\_\_\_\_  
(Signature) (Date) (Pt)

\_\_\_\_\_  
(Signature) (Date) (Pt)

309.1 TASKS (CONT'D)

A B C D E

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

.16 Act as relief for meteorological/ocean observer X X X X X

(Signature) \_\_\_\_\_ (Date) \_\_\_\_\_ (Pt) <sup>1</sup>

Completion of .1 area comprises 50% of support action.

309.2 INFREQUENT TASKS - None to be discussed.

309.3 ABNORMAL CONDITIONS - None to be discussed.

309.4 EMERGENCIES - None to be discussed.

309.5 WATCHES

Stand 4 satisfactory watches under qualified supervision.

| SIGNATURE | DATE  | PTS |
|-----------|-------|-----|
| _____     | _____ | 1   |
| _____     | _____ | 1   |
| _____     | _____ | 1   |
| _____     | _____ | 1   |

Completion of .5 area comprises 10% of support action.

Total Points This Support Action Including  
Required Fundamentals Section:

20

Personnel Qualification Standard  
Information Report and Suggestion Sheet  
PQS DEVGRU AUTOVON 957-5367

From \_\_\_\_\_ DATE \_\_\_\_\_

Activity \_\_\_\_\_

Mailing Address \_\_\_\_\_

\_\_\_\_\_ AUTOVON # \_\_\_\_\_

Qual Standard Affected \_\_\_\_\_ NAVEDTRA # \_\_\_\_\_

Section Affected \_\_\_\_\_

Page # \_\_\_\_\_

-----  
Remarks/Recommendations (Use additional sheets if necessary)

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Suggestions for improving this Qual Standard

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